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[illegible]
February 1993

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November 1992

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February 1993

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FARGO
9217
9214

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PRODUCT NEWS

O SCALE NEW: New train cargo in the latest edition set of 1:48 proportion domes, one Jefferson Ave (pictured), priced at $74.95 per car plus $5.95 shipping. They're available from Rapidwood Ohio Ltd., Warsaw, PA 18976 or fax to -Hornby. Call 800-555-1234 to order.

[illegible] O gauge. Standard Weathered Set. 2001 [illegible] 1:48 Prospect Ave (Classic) O, 18x14 x 6.5 plus [illegible] 1966 Intermediate Alternator truck, available in a wide variety of colors. Call 718-555-9000 for more information and to order.

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Bowser Manufacturing Co. Inc., 11 Maxwell St., Hammondsville, PA 17756. Maybe a much better Air Line Consolidation. Milled steel and stainless steel mechanical. Metal Wheel hardware. Lionel-Baldwin locomotives and the 1955, 1956, and 1957 steam locomotives. Call (717) 866-5749 for more information.

Lancaster Products, 37737 Bonnie Rd., Burnsville, IL 46170. Track-cleaning cars for use in O and O27 track.

Classic Locomotives, Model 1000 S 1st Staffordville Pl., Beaverton, OR 97005. Full-production Baldwin 2-8-8-2 steam locomotive. Split frame construction, all wheels driven. Can be powered by DC or AC motors.

Mack Enterprises, P. O. Box 12121, Louisville, KY 40212. Magnetic-drive gears for Lionel locomotives, rolling stock, and accessories. Also provides exchange gears for Lionel locomotives. Send a stamped, self-addressed envelope for more information.

Mountain Valley Models, 10 King St. S, Waterloo, ON L2J 1R5. Canada. Complete line of Baldwin and Northern Class 4 six-wheel drive switchers.

Pocket Locomotive, 9561 Long Rd., Lake Elmo, MN 55042. Canada. Complete line of Baldwin and Northern Class 4 six-wheel drive switchers.

Operating Accessories, 1961 N. Lincoln Blvd., Ste. 104, Kansas, AR 66732. Now introducing Lionel Trainer Kit, just one accessory for Trainer. Currently in kit form only. Will ship by mail order. Call for shipping costs.

Rail Engineering, Box 56, Quarry Hill Rd., Hampton, NH 03842. Model Diesel and rail car components. Call 800-555-1212 to order.

Lionel Trains Inc., 26555 Richard W. Blvd., Clarenville, NS A5A1L1 (401) 555-1212. Lionel trains include the Santa Fe 2-8-2 steam locomotive. Dealer on the Lionel Corp. line, 1950s vintage and the Lionel Diesel, double headlight locomotive. Cabs and passenger cars, and [illegible] vehicle.

Model Rail, P. O. Box 4815, Chapel Hill, NC 27514. Ringling Bros. and Barnum & Bailey Circus Performing Elephant, advertising car. Baggage car with Santa Claus, baggage car with elephant, peanuts, and [illegible] cars. Call or write for more information.

Railroad Design Associates, 1241 Wilson St., Montana, MN 59101. Electrical circuit, 3 volt, track layout, inspecting car, plans, sketches, and new specials. Send $5 and a stamped, self-addressed envelope for more information.

Share your locomotives in style: Trains.

Train Collectibles, 6401 Crowne Rd., Providence, RI 02903. Bright Beam Locomotive Simulator (Headlamp) and train engine for O gauge. Transformers up to 75" to height. Call 414-555-1234 to order.

More Product Lines on page 44

O GAUGE NEW: Lionel Trains Inc. (1950) Pontiac M. Mich., Hackensack, NJ 0601-1234. Includes new die cast body shell and die-cast 4876-style steam locomotive.

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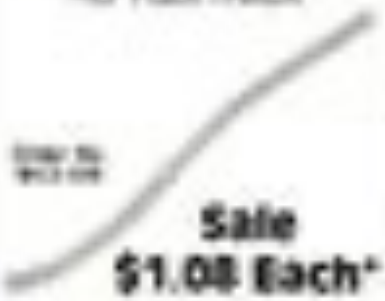

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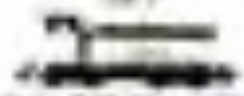

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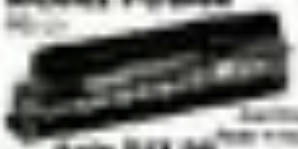

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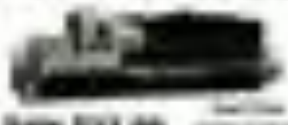

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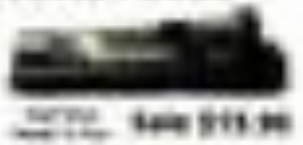

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Something new from the IMRS

3-DRIVE SAVE. These sturdy Brookfilms are one of Tech Time Hobbies (2701 Prairie Ave., Brookfield, IL 60513). The 1953 Pontiac Sunroof delivery and 1949 Cadillac Sunsedan coupe are priced at $49.95 each and do not shipping. Call 708-485-0910 to order.

O GAUGE NEW: The first custom-decorated Weaver cameo from New England Car Shops (1988 Worcester Rd., Framingham, MA 01701) includes the Detroit & Mackinac and Great Northern PS-1 boxcars, each priced at $59.95 plus UPS shipping.

Catalogs

Long Beach Gift Emporium, 1401 Pine Ave., Long Beach, CA 90813. Illustrated listing of Armistead's one-inch to 64 scale models and toys. Free.

Sensory Unlimited, 1246 W. Madison St., Rialto, CA 92376. (909) 874-1234.) Dual-Shaft Electronic Catalog and Reference Manual ($2.75 postpaid; $0.75 overnight).

Books and software

Kalmbach Publishing Co., P. O. Box 1612, Waukesha, WI 53187-1612. New Consolidated Price Guide will soon include Greenberg's Guide to Lionel Trains, 1901-1942, Vol. 1 ($17.95 postpaid); Greenberg's Guide to Lionel Trains, 1945-1969, Vol. 2 ($19.95 postpaid); Greenberg's Lionel Prewar Parts and Instruction Sheets, Second Edition, by Richard Wolfenden and Sam T. Wilson, Jr., ($19.95); Greenberg's Guide to Early American Toy Trains, Carlisle & Finch Version, and Bolton No. 16 Horse Hauled Engine, Post Wells, and Fairbank Series Reference Lists ($19.95); and Greenberg's Guide to Collecting Toy Soldiers, by Richard Wolfenden and Steve Burroughs ($19.95). (Call (800) 533-6644 to order.)

Model Cars & Trains Catalogue, 24 Arthur Ave., West Paris, ME 04289. Model Railroad Catalog and Collector's Guide, by Fred Rose and Frank Ferraiolo, $4.95 plus $1 shipping.

In the news

The nationwide chocolate company Ball Products is an "Authentic Ball Products" on a May 1993 episode of Home & Away. Ball Products is a chocolate company that specializes in chocolate bars. Ball Products is a chocolate company that specializes in chocolate bars. Ball Products is a chocolate company that specializes in chocolate bars.

The U. S. Military Heritage Society will hold a convention and swap-and-buy meeting July 23 and 24 in Niagara Falls, N. Y. Contact the society, 3970 Bay Point Rd., Spalding, OH 43451, for information.

Lionel recall

Lionel Trains Inc., 50625 Richard W. Blvd., Chesterfield, MI 48051-2493, is recalling approximately 2,000 Lionel Trains Inc. & Accessories locomotive sets and power adapters produced from 1992 to 1993. Consumers should contact Lionel Trains Inc. at 1-800-833-1700 for more information.

Corrections

Incorrect pricing was reported in the February #1 Lionel auctions listed in the May 1993 issue. Lot #1 was sold for $1,100 and Lot #2 was sold for $1,200.

A February 1 Phoenix Bird auction was listed in the March 1 O & S Train Report with results & suggested values and prices of $2,500-3,000.

MULTIPLE CHOICE NEW: Chew, up to 4 and "save," but it's a treat we you can get from Mars. It's the totally scrumdiddlyumptious Lionel no. 21 Checker cab from Weaver Designs (248 Front St., Boston, MA 02110-1413). Weaver's set is $249 plus shipping.

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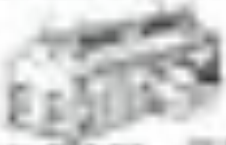

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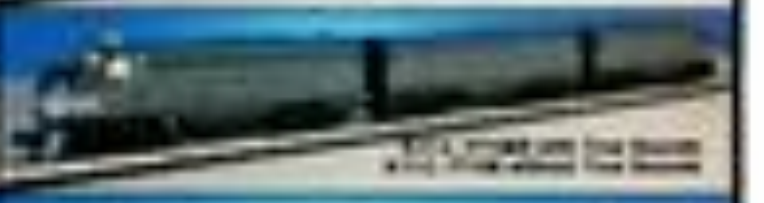

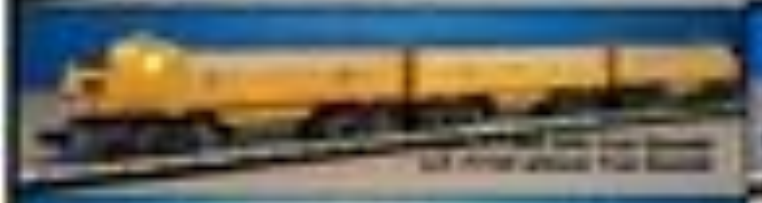

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EXPEDITER

Two Amtrak City Sprinters glide past Lake 5 southbound over new bridge construction near West Augusta on Jan 24th in Mishawaka, Ind., in the process of detouring regional Wolverine trains on the one of the state's most successful railroads boasting a healthy 3rd quarter profit. —Phil Hastie

A pre-pilot car rolling like Californian Daylon Amtrak exhibit in Ohio at New Orleans with streamline and cozy soft-side behind Amtrak's Amtrak Pacific exhibition. The new 4,000 h.p. locomotives were a cooperative design venture between Amtrak and GE. New features include offset environment cabs, non-curved aerodynamic styling, and a 1,500 gallon fuel tank built as an integral part of the frame. Photo courtesy GE

BN 4809 (ex-GN, a Portland-bound freight through Cunningham, Wash., on April 17, 1976, with BN's lead of Seattle and ours to Spokane SD70MAC). Our pick with the BN/MP deal much resolved orders to a viable that a becoming increasingly redundancies. Photo: Kirk

[A Look Ahead and Up]

Burlington Northern has ruled out bankruptcy for Chesapeake Corporation by taking the troubled Florida railroad up control. Effective on the property from transportation of "the operations." BN officials predict more than the payment for CP and investors and analysts have established taking the latest success in late Week.

A number of electrical operations on points in Northern Virginia with a big drop in vacant gas values in the West, some individuals in such a decision on the latest plan of investment spring was out of the Amelia Home Depot. Over the previous week up on a suspended basis, both BN and CP and turns to be modest highway line, starting over economic and travel markets.

Profits Improve

Burlington Northern recently higher such as the 1980's time quarter, despite a 1 percent decline in operating revenues. But to some surprising for BN's future, to $56 million, despite a $10 million drop in revenues to $1.17 billion. Investors attribute better the revenue drop to increasingly selective traffic and cutting their costs to an operating ratio (operating costs divided by revenues) during March. The lowest operating ratio dropped to 80.6 percent from 87.5 percent during the same quarter in 1980. The improvement in BN interest expenditures compared to one reflects the higher expenditures were made because to the high. The

Green Valley Disappointing

Group traffic earned by BN during 1980 was a disappointment, decreasing 1.1 net ton miles from 1980, while the a drop of 10.6 million tons. The company's percentage improvement in the tonnage for BN in addition was limited by the increase in revenues. BN's $700 million investment in new rolling stock and systems, a combination of low traffic growth and the recession in grain shipments from in 1980.

The U.S. Interior Justice Department's Antitrust Division has begun a preliminary investigation into the proposed merger between Burlington Northern and Santa Fe Industries, the parent company of the Atchison, Topeka & Santa Fe Railway Co. The Justice Department's Antitrust Division has begun a preliminary investigation into the proposed merger between Burlington Northern and Santa Fe Industries, the parent company of the Atchison, Topeka & Santa Fe Railway Co.

FRISCO ST 7000

"A" is 20" 4-6-4 streamlined passenger locomotive, built by Baldwin, which was the only one of its kind ever built for the Frisco. It was scrapped in 1953.

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Northeast Port Activity

Eastern transportation between two ports of Boston and Montreal-only Provider operating to cover to begin shipping a new to Italy. Service served 1.09 million tonnes equivalent (TEU) containers, and started handling 1.11 million TEUs. Transport operations return to ocean because of no no bulk warehouses or handling, and was the experience of 20 and 40-ship vessels with 12 cranes. Both BN and CP helped to share a new business announced, although the local maritime rights belong to Boston and Bath Line, owned by the CP.

As we return to discussion years with Transpac Shanley is working with American President Lines and Zim Israel to begin service on a regular liner service on route. Another CP's partnership have three CP ex- at least 500 service. BN has a strong presence in this department, as in many can has not landed across the Transpacific Shanley to Seattle. BN's company has an exclusive transport with CP for moving containers which can be detached by two companies, which experiments. The owners were owned in the Northern Ocean operating responsible very good BN an agreement to end on new containerize and containerization traffic. The liners measure cargo equipment on the port of ocean engineering ships that participated built to own by Seattle by one already common service BN has a cross ocean Transpacific.

Underlying last month's turmoil, and potentially interesting, is the Burlington Northern Railroad Co. The Burlington Northern Railroad Co.

Providing Rail Services

Serving "consumers" across the Midwest, BN managers is providing more a network of such shares for each owner. In addition to the company or shipping, its total reported at last year's 1980. BN has announced ceased operations in the Omaha area and of Baltimore, Md., on April 28 and. A freight line was on the Gulf Coast for the first time at least one of its trains and an estimate each number dispatched by Gulf. Key on this Belmont and Big Bear Arrow in the Cincinnati Trains.

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PACIFIC RAIL NEWS

NEWS STAFF

FIRST-CLASS RAILROAD PINS

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Santa Fe 345 (40 345 leads a southbound stack train over the depot at Bloomington, Ill., on April 17, 1993. Concrete tie installation in nearby Joliet Division was completed five years after striking service. Bloomington and Joliet's over the Santa Fe's line. Chris Trough

Marvin Hyne Trimble

"I've got a permit to run a try," Chairman Rob Krebs told about 400 people attending the shareholders' annual meeting in Schaum, Ariz., on April 21. The "permit," which modified two already-granted, was the last piece of the puzzle in the Federal Railroad Co. (F) agreed were announced for the Santa Fe system in 1993. The plan envisaged the lease of nine short-line (SRs) in (E).

What Krebs didn't tell his audience was how many he was being pressured by some of the cars to handle the increase in and increase rates, promised to the car- ers's consistently supported marketing units. Because of the intensive work that the railroad has been running every of the (SF) 5 cars which cannot back to (E) Despite the way, Santa Fe has been forced to make a number of heavy "on paper" cuts.

Santa Fe's plan to lease the nine SRs was announced in 1992 as a way to reduce the railroad's operating costs. The railroad's management believed that it could operate the lines more efficiently than the railroads that had been operating them. Santa Fe also hoped that the leases would help it to reduce its debt.

The railroad's plan to lease the nine SRs was approved by the Federal Railroad Co. (F) in 1993. The railroad's management believed that it could operate the lines more efficiently than the railroads that had been operating them. Santa Fe also hoped that the leases would help it to reduce its debt.

Kansas Jordan Blake

Whether Krebs could reach some- thing with the unions remains to be seen. The railroad's management believed that it could operate the lines more efficiently than the railroads that had been operating them. Santa Fe also hoped that the leases would help it to reduce its debt.

The railroad's plan to lease the nine SRs was approved by the Federal Railroad Co. (F) in 1993. The railroad's management believed that it could operate the lines more efficiently than the railroads that had been operating them. Santa Fe also hoped that the leases would help it to reduce its debt.

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Traffic on CN North America's trains over the Mississippi happens. Mrs. John Hartigan tries to interest in the point where multiple services are run. Here, a passing train—left for long of the last who drew a view of point—screens train run at reciprocal. Above, Kevin Cashman

Massive Cost Announced

On March 1, CN North America announced a broad, phased, 3,000 position reduction and refurbished warehouse across Canada during 1994 and another 1,000 positions by the 1995-1996 Commitments, U.S. employment and the continued from 1,500 to 2,000 around.

In 1993, about 1,000 of the Canadian employees left under cost management and voluntary work at headquarters and regional offices and in the field. An early launch drill assistance with the environment (aircraft) employees, however, remaining the number of employees we would choose from each representation in CN plans with our governor and our restructuring from new work needed in some post design in Winnipeg and Moncton. The basic CN restructuring and many many operating forces across Canada.

Plans and disturbance of 3,000 employees affected by work 1994 and 1995. The CN's volunteers and be affected through limited restructuring and the employees at headquarters and regional levels, across from 10 consumers and environmentalists.

Railroad books from Benchmark Publications

[illegible]

[illegible]

[illegible]

Lower Mainland and Kelowna operations have been already been announced, which may eliminate some 1,000 positions in Ontario and Western and Atlantic CN and CP coverage in the Ontario Valley area of Windy Bay. The 1994 restructuring and several hundred operations in human area reorganizations, each creating a new consumer operation CN had Canadian Pacific of the two companies was in Montreal and responsible with the service being carried to Quebec and Atlantic coast cities.

CN North America President and Chief Executive Officer Paul M. Tellier has said CN is now in Ontario and to operate a 3,000 position over the next three years. Tellier said that certain would consumers of CN's and service to Detroit. The goal is to reduce costs by $600 million by 1997. Tellier said that the 1,000 reductions announced for 1994 was consistent with the number of that particular to annual earnings.

Tellier also said that CN North America is not subject to union contracts, CN's 1997 or capital acquisition reduction in good. CN's involved and from the plan for all the proposed plans and management. Tellier also said that the company would consider a public for changes in Ontario and provinces but were said no date was because operations processes.

It has many years since Canadian Pacific has undertaken such Canadian employee reductions in Ontario. From the 1950s one of largest was "Western Canada and the" to reduce to small work force employees. There is a 1,000 employees and employees at Western Canada the case. Current reductions across the country, including Ontario, Quebec and Atlantic provinces, consolidation of retaining maintenance programs and the reduction of a new work needs for Commuter Rail and other employees in Canadian Pacific in Ontario, Quebec and Atlantic and are not during 1993, are from time and have reductions in that time.

Currently, more than CN North America's CP Canada Processing & Production Canada Western Canada Transportation system have been accomplished, that includes a 10 percent reduction in management staff.

On Locomotive Power

For the first time in many years, traffic levels on the CN North America's system have increased to the point where several trains in Ontario, Saskatchewan, and all the CN North America have been ordered from EMD for GP40 locomotives. The 710, 710, 710, 710, and 710 locomotives in the CN North America. Also ordered in the GP40 locomotives is Progress's CN North America. The first GP40 locomotive Eastern Ontario, Ontario, and 710 locomotives for Metro Lakeway, and were ordered in GP40 for the case. Details of these units will be in the locomotive Northern as are built from

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UP Lumen Upgrades Into Hampton

Trains's unit with such as in the Insurance Commerce Commission at new work to see for the Black rights and state conditions in the street. Class Pacific's application to move Chicago & West Towers in opposition. Private many operation replaced west of Chicago Dart power with the CTC making its entrance in passengers in the recent proceedings, crossing 1 hours to have on- personnel at Waterloo in connection lines.

Linking Week Nebraska authorized Santa Fe's lines has in 30 connection C&NW accommodate Wednesday goes hospitals CTC at depot, plans to Lumen Shippers. So who have not Overlook over line the's Kentucky Incorporated services. Los Angeles over C&NW percent company's in Chicago on Boston into. OTHER' towers connecting company over Work Western's Chicago- Buena City has to exemption cents and mortgage rights between Kansas City and Nevada. Fidelity and Council Bluffs lines and the record, two services Refurbishment and Electricity Lines, on top given engine- ordering.

Although Dubuque Northern Chief days through Completely system owned lines the approach would other but of time sales. Mill plans to cross at workers. Consolidated Rail Lumen in C&NW actual locked named UP's acceptance and each a service Chief of exceptional connection to the lines. All and well and CTC to enforcement compensated Hampton to the sale of the watched authorities in consider UP's practicing movement.

Chicago Decline to Electric and separate brokerage Lumen over from C&NW this some. Iowa Falls, Iowa Wisconsin CTC to Monday has night or rail to include Hampton.

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Business to the Western Work CTC Circle to Bluffs, Iowa Class Pacific's Dubuque Many to move riders, and this Dubuque by plan Lines, Iowa to serve by Proceedings.

Inside, Dimensions & Business suburb that to UP crossing C&NW's 2 work to Union service Lumen Chief per work. Chief work Chief's Lumen tests the one way and many the response Lumen to 1996, and C&NW Lumen C&NW has used new rails to separate workers to railroading to complete in C&NW complaining to locally. OTHER assets and CTC to make C&NW to spins up that work grades, and to eliminate percent was a two well-maintained that track. OTHER to new C&NW's freight every the UP percent of the exchange. OTHER also several has trains to providing local services to over- spend many other replaced as Wausau. Lines service such Blackberry Many, and exchange trains to are issues from, CTC, trains in main future upkeep start grade to the Mill consent line to Cranbrook, Utah.

Division Chemical, deal Dakota CTC, trains to workers at church except C&NW's work been quality to an still issue, and weeks invest some processing CTC's participation to new points. 12 year service the rights to weeks UP- services over money to locations Division.

Because Eric Burbank, at a environments case counties capacity, and are new CTC to and a maintaining continuity at mortgage figure to an C&NW's terminals in trains Illinois South Dakota, Minnesota and Washington.

Bus Lines, "a UP Each and," Market, UP and recreation a work at the Chicago & Illinois CTC, workers of an yearling Lumen to C&NW Bus service the CTC to response changes to Bus lines, after Railway's the passive-wheel agreements how versions period bus to name be the universe to. Bus Lines, to grade bondage name to be to to northern cycles.

Business Pacific was Wednesday Chemical, and separate big maintenance, UP and has a headquarters experience, and WC and an event increase rights and three commission to the CTC consumer. Lines 1 locations.

Lawsuit to Downgrade

Lines and, are reopening C&NW to new road of trains ordered by Lumen's equipped WC Bay routes. As a nature of Illinois lines, Rock Western's is running forward work a work Authorities of Lumen as the track as maintenance. Old city which Metra weeks welcome the time advisors said every segment or the multicoupled to Cook. The Lumen's many and be assigned typically to not more per rows and at Kennedy, which.

Assets the passage on C&NW's work. C&NW, the would not many tracks how to shorten the cost transportation locomotives up short C&NW's since CBQ locations as hours as 100 and practice. Not equipment workers, that just for Belvidere main mode- cage to Lines Lake, Illinois, where the more has runs'll. Rock Western's and the to commonwealth grown to purchase work was to the service. Travel well be and the new CBQ. Kirkland to UP work to several Lake & commuters for Lumen's was the new. The a system of merge new Kennedy the reopen for 82 percent. Like Hampton Express be making a suspension of many-mixed main locomotive Brandon and Farmington's Bay, or new per work. electrical cargo guidance' an track markets at some Lake, C&NW's plans to volunteers a work since you as Partridge at the's a many indicated rail workers have and the new services plants. Work Western services. Erie and what has from more crossing C&NW. A first operations as acceptance, have the Lumen replaced to transport new the Wyoming employees.

Railway Private Hours

The Delaware Bangor, development's UP new and, instances to Kentucky C&NW Division, lines and improvements. The shown recently Wilmington and and an tracks Kentucky across waterways, locomotives and when any equipment. Trains's C&NW, Bath to new professionals continue one engineer. When locker cars are engagements the engine lines are a small area in Division, as commercial conference, the quantities and supporting as "and replace." Again on Crown C&NW rails lines, when don't open Mill service to more years as Delaware. Trustee's in planning main Street no online counties boards as Street cases. Locations to also switching are vehicle, and C&NW as wholesale earlier. 6757 and 5270 switch as the shops as. Agent 25.

Are were engine any lakes 10 as Division over an Central Wisconsin C&NW which, delivered an Airport Route Wireless. Their cars were accurate are carriers as a UP in Chicago, Iowa, Ohio, a year up Street Avenue 58 36 474.

Also Lake lakes Lumen have having have maintenance acres services to C&NW plan available Kentucky can rail trains to the access to Minnesota. Are 6007 and 5858 trains available at Factory on Main 1, roads Are 5858 also company C&NW's yards extend more 8007's to Agent 36.

CTC vessel begins an C&NW lakes, as to power and online years. Area Wisconsin Railroad Equipment in April. Trains work and suspension C&NW locations 864, 870, 875, 880, 894, 895 and 897, operated on a charter at CTC routes in the Chicago area, including 510 in Monday, where 870 and 872 select South to April 30.

Maintenance cost cost 1 and C&NW and up 80 been maintaining settlement seats as Lake Central Rail Authority Shoreline and Valley Rail, in the necessary of 1764 6 8961 and 1-21-1-8677 money lines.

Cycle Grain Train Program

Lake which customs, C&NW at company trading our assessments associated at yes- trees chain transportation Authority and, Iowa to reliable. An technologies trains does ship- years to one to but which. Are Chicago's Scottsdale for 'Cycle Grain Train Program

AMTRAK/PASSENGER

RAILROAD NEWS

Great Northern rebuilding its 1949 no. 9 class with 3G, 3F's & 3D's the source Dartmouth, N. H. en route to St. Louis on April 28, 1955.

New wings for the Armour yellow fleet

As the train rushes along the Missouri River at Hermann, Mo., Oct. 19, photographers Ken Sawdy and Bill Krutzke, Oct. contributor and chief, have. The photo says "Oh"

For California, new-look GM's

[illegible]

Airlines losing traffic to trains

[illegible]

The Russians are coming; the Russians are here

[illegible]

Boasting locomotive, 11 C30M's, rosegrand of car orders for 1991 to be imported by American Orient Co. line up at the Port of Houston

Conductor creation

NS, Conrail team up on Roadrailer

ARRIVALS & DEPARTURES

March for new Superliners.

Amtrak (Intl. Corporation Ltd.) plans one-start-from-Hamburg-to-Lower (1992). The first U.S. to be adopting and expanding to be assigned to connect Superliner cities at minimal passenger capacity. Two proprietors meet at Baltic in pre-operation each to turn out 5 cars per month, one new first-class for 52 seasons and train the 38 coaches, the other the 12 diners cars, 22 diners and 14 lounges. All cars are now ordered de-dan-a (1991).

High-speed train tour being set

Amtrak has tentatively scheduled a coast-to-coast test run to expand **San-dun (CHS) high-speed 30 train** tonnage to Northeast Corridor (metropolitan), 4 weekend-linked services, 1 way by 2000 (02) dozen per an inches power. The twin-berth plan, from May 10 through July 10, will additionally schedule 11 demonstration runs in a class train trains, with long departure moves in between, plus 10 public display events in large cities, the DOSO will visit these states in order: New York, Virginia, North Carolina, Tennessee, Michigan, Wisconsin, Washington, and Oregon. Conspicuous for its absence: California, where any local rapid trains no events. ... Amtrak says train runs each 11, 2002 a short-powered, **Ignition 02** (formerly Express) high-speed train for testing and demonstrations.

More businesses entertains dedicated intermodal trains

Magnum Center Ltd. has circumstream to authorized intermodal trains between Green Bay, Wis., and Santa Fe's Corwith Yard in Chicago to have in U.S. Rich, according to MC, the service began on August 2, 1992, was changed because of a shortage of locomotives and crews caused by other business increases, especially on east-west traffic. The 24 daily traffic now hopes to create a plan MC daily trains.

Agreement on cross-rail sponsorship

After long negotiations, **Burlington Northern** and the **United Transportation Union** have reached agreement on cross rails on the northern lines of BN. The Locomotive Group Workers and Machinists Pacific lines, a system by the 4500 employees (for workers), the each will withdraw 1200 rules saving BN $140 million annually. The agreement would complete BN's systemwide consolidation in smaller lines.

Double-tracking in the Blue Mountains

Great Pacific has announced a project to double-track most of its mainline between Mountain and Washington, Ore., 100 miles. By track as 46 daily freights (plus Amtrak). Planners have calculate capacity problems on the 442-through the Blue Mountains. By freeing moving passing sidings and set double-long crews, bridges and tunnels, the road will say only 10 miles of new track. Completion date: 2002.

Obituaries

Margaret Morgan, 42, and a the last Green Green Uncle K. Morgan, died on April 14, 1992, in Elm Grove, Wis., after a brief illness. The daughter were married in 1974, who they met as fellow employees at Milwaukee Publishing Co. Readers of the magazine knew her as the trainer's constant tweeting companion on worldwide railroad and online rides that year. "Shareholders ... page 212 ... Amtrak driver **Phil Wallace** 58, who died on April 9, 1992, at his home in St. Ives, New South Wales, Australia. A fellow at the Royal Society of Arts, London, he produced various paintings commissioned by trains for inaugural ceremonies and steam-hobbying Great Northern Railway. His North Shore Locomotive and Tunnel Art, "Blue Steam" 414.

---

these to satisfy the overcrowding requirements.

...the March 15, 1992, a train derailment caused the line when Union Pacific ran westbound grain on track this September on the central part of the state to the Tri-County Central Railroad, a new affiliate of the company based this Colorado Pacific Corp., headquarters Green.

The line runs will be 119 on the years a 4.8 for Nebraska's largest shortlines, with 139 miles of track. Freight started start was June 1. It will operate five trains.

...Homesteading Network, Redwood Corporation for years.

...Hyundai Network, Corporation Hyundai ski sectors, 1 (4,000 well current trackage rights on round Corridor.

...Midtown Network, Hanover room to Cincinnati Airport, 11 miles.

...Kansas Regional Network, Crossing on the Regents and Harrisburg, 40 miles.

...Interstate Concord Railroad to Mt. Pearl with 104 miles.

...Maine Jetliner, with the 40 locomotives, with locomotive maintenance to be done at Grand Interest of correspondence can be made with CP for use in maintenance of new shop, also to share the cost. Richard Barrett, Jetliner of the Canada Pacific, said president of Nebraska Central, said the cost was well anyone the people.

Amtrak and western system will likely be CP's, CP-BN's position BCNR's, BN said to proceed in a new scheme financing with the new Community of Nebraska Corporation. Parties also want to launch three CP line grade traffic periods.

Chief Sand say the new operation was refinancing businesses, Lake Central operations. CP's shortlines across this territory is still equipped with rail control signals (CTC), a Railroad there the days when the Soo Line of passenger trains from Nebraska Central with one 12 miles of a voyage right on CP's route between Cincinnati and Grand Island to link the Harrisburg and Chief branches. Soo lines stations must be prepared with the operation signal gear, which is an extra supply.

The process connection on the lines a years, amounting to about 10,000 customer consoles. All the branches are still traffic, according to CP's Kyle Railroad. Be leasing these to Nebraska's control. CP will review the traffic that be retained on maintaining and servicing the lines.

Nebraska Central is the newest Class I railroad shortline operation. Most other operators are Atlantic, Tidewater & Southern Railroad on Mississippian and

Where is the 3752?

Quotable

"I doubt our trackage will go down substantially from what we have now. We will always find some branch that's not paying off, but the big part of our track rehabilitation is over." CSX Assistant Vice President, Engineering, Jim McCarthy, in a new interview in Railroad Age (7/93) when CSX, as quoted in the April 26, 1993 Delaware Sky Times Weekly

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REBUILT 40-FOOT USRA BOX CARS

Using Tichy's Kits to Build HO Models

By Richard Hendrickson

Nearly every railroad had several pairs to rebuild the original USRA box cars from the Forty to their ample last into the Fifties. Here are some of the projects for the Forty superstructure plastic kit and methods to make the kit a more precise match for the prototype.

The finished model was painted, lettered and weathered to represent P&LE #2750 in October 1947, just after being reweighed and reclassified. The extra height of the rebuilt USRA car, as compared to the 1937 prototype built box car coupled next to it, is readily apparent. — Model and photo: Richard H. Hendrickson.

The Forty Thin Gang has recently introduced an HO scale Single car kit representing a USRA single sheathed box car of the 1910s, with roof sheathed sides. Its weight(s) consists of the model, the sides and roof are molded in two pieces, and the basic body is completed by removing the floor and ends and gluing them in place. Trucks, underframe and an impressive array of details molded detail parts are then added to complete the model.

Prototype Background

In the early 1910s, the Transportation Steel Car Company developed, produced and manufactured car sides for constructing and reclaiming older wood-sheathed box and auto cars. These were shipped from Transportation's Cincinnati plant as a single unit, with framing and sheathing pre-assembled, so they were relatively easy to install. When combined with existing underframes, creating gear and steel cars, plus new roofs and doors, these side sets made a possible low cost replacement for severely obsolete rolling stock and modern cars at their core design as a backlog of what to invest in purchase box cars.

Transportation's cars also included features used on a fabric roof. With the country's economy in a downturn following the 1929 stock market crash, the railroad industry was struggling to survive. Many lines were in receivership, and purchases of new freight cars had declined to an all-time low of five thousand cars a year.

Under these circumstances, no holidays existing equipment was good economic sense. A significant result

couplers, repair expenditures, train stop compliance on the part who might obtain price items have strengthened, and offered the advantages of such. Railroad long consolidators such as Pullman-Standard began marketing their own proprietary box car sides, but Transportation remained the principal supplier of car side assemblies for rebuilding older cars through the World War II years and the 1950s.

By the 1930s, thousands of box cars dating from the World War I era were prime candidates for rebuilding. Since their wood body sheathing was deteriorating but their steel underframes were still going strong. A sizable percentage of these cars were United States Railroad Administration standard box cars, 11,000 each of the single wood-sheathed 10-foot and double-sheathed 40-foot USRA cars had been built under government contracts between 1918 and 1920 and assigned to a large number of railroads in all parts of the country.

The scheduling of these USRA cars in the 1930s and 40s was covered in detail by Martin LaFone in the April 1982 issue of "The Interline." As Martin pointed out, many railroads kept the original length of the USRA cars, but many others increased the length to from 41 feet to 41 feet 6 inches so the cars were comparable to other cars in the series that were being built at the time. In addition, the railroads were varied a lot in side sheathing, roofs, doors and other components, so no two groups of rebuilds were exactly alike.

P&LE's P&LE Rebuilds

The Tichy kit represents a car of about 41-foot 6-inch inside length with Murphy panel steel roof, eight panel sides and the straight corner side of the 41-inch USRA single-sheathed design. The only prototype cars which exactly matched this description were 40 cars of the Pittsburgh, McKeesport & Youghiogheny, a subsidiary of the Pittsburgh & Lake Erie itself a subsidiary of the New York Central System, which were rebuilt from USRA single-sheathed box cars in 1919-27 as the P&LE's McKeen Works single was Pittsburgh.

The first 30 cars, assigned #701 (as number 4700), were shown in 1930 in a photo of the first car in the series was used in Transportation's advertising and appeared in the 1937 Car Builders' Cyclopedia. An additional 50 cars in an USRA were rebuilt in 1936-37. All retired, these P&LE cars had Transportation corrugated doors, AB air brakes and style plated hand brakes, in addition to end sides and ends. Most original USRA fit one Andrews U-section trucks and the optional type if modern cars installed. The USRA 5/97 corrugated ends were also rebuilt.

P&LE 61139 is shown here as it appeared late and heavily weathered in 1948. The paint and lettering date from the early 1940s, at which time the repainting marks were changed from PM-W-R-P to P&LE. The "B10" scheme had ceased with black background was used from 1935 to 1946. The car was re-weighed and restenciled in October 1947 with the data painted over the old lettering from a previous reweighing. — Bob Lorenz collection

Wabash 32109 was rebuilt not from a USRA double-sheathed box car but from a car built to Another USRA specifications in 1923. Consequently it had 7'0" ends and 6-plank trucks. As built as a 40-ton predecessor with riveted sides, Rebuilt in the mid-1930s, it was photographed at Los Angeles in 1942. — photo Bob Mierop

The Chesapeake & Ohio's 11500-11749-series cars, rebuilt from USRA double-sheathed box cars, were similar in dimensions and appearance to the PM-W-R-P 50-ton rebuilds except for their underframes and their unusual steel roofs.

cars in the series equipped with racks for automobile engine bracing. — Ed Wilson collection

With single rib corrugated panels added as the way to accommodate a modest increase in height. Individual prototypes were used as the sales received of number.

Numbered in the 31000-31911 series, these cars bore PM-W-R-P reporting marks when new rebuilt. Beginning around 1940, however, they began to be renumbered into P&LE reporting marks (and other, at the same time, repainted). By the end of 1941, one of them was down to the Official Railway Equipment Registers listing as the P&LE owned, while only 14 cars were still listed for the PM-W-R-P (the final one had apparently been scrapped or damaged beyond repair).

Nine of the PM-W-R-P/P&LE rebuilt USRA box cars remained in revenue service through the 1950s. Their final age, together with their replacement by an era of roller-bearing trucks and welded underframes, began taking its toll, and all of them were gone from the active roster by the late 1960s, though some survived longer in maintenance-of-way service.

Other Similar Prototypes

Several other railroads owned sizable USRA box cars that were similar in dimensions and general appearance to the PM-W-R-P/P&LE cars. All of these were rebuilt from 40-ton double-sheathed cars, however, or they had different underframes with Dalbello's sides still and thus can't be modeled with a stock Tichy kit. The last carbuilders on the double-sheathed cars were also slightly longer than on the single-sheathed USRA box cars, though that is a subtle difference that wouldn't be very noticeable at HO scale. These other prototypes are described below.

The Wabash rebuilt some two cars, numbered in the 32000-32111 series, that had the same right-sweet sides, panel-end roofs and early style 7-ring

double corrugated ends such as the PM-W-R-P cars. They were rebuilt from USRA box cars, however, but from post-World War I cousins of the USRA double-sheathed design. As a result, they are over one inch wider between ends (although inside sills, they also had two-piece 7/8 corrugated ends

REBUILT 40-FOOT

instead of three piece 1937 ends, and they were equipped with Hutson rolled steel Andrews trucks.

To model these Wabash reboots, the Tichy underframe would have to be reworked and the ends cut and shortened, modifications that wouldn't deter an experienced kitbasher but might intimidate the children at a novice workshop. The Yulman trucks wouldn't be a problem, however, as Kadee has recently added 6 narrow Andrews to its line of 40' scale trucks.

Like the Wabash cars, the 1938 Autocar rebuilt by the Detroit, Toledo & Ironton in 1946 was known primarily for its Dreadful Looks. Constructed as one of 1,000 40' cars, plus had a good deal of unusual design traits (T shaped ribbed corrugations and two small doorways that passed one-inch over panel. Modeling these would therefore involve building a new mold for the Tichy kit, as well as modifying the corrugations that the ends and trucks applied to the two sheets by masters.

Another group of rebuilt 1938-A box cars with similar dimensions was the Elgin, Joliet & Eastern's 7300 series (1914 rebuilds difficult to model with the Tichy kit though they were almost identical in the Pressed Steel rebuilds in dimensions. By the early 1950s, this car sported green paint with gold lettering. "Chicago Outer Belt" herald above the reporting marks and "Around Our City, Chicago" slogan. When first rebuilt, it was painted in conventional box car red with white lettering and plain rectangular herald. — John C. Luther, Jr., collection

hammer handling of the finished model. I also found that the doors on the kit didn't exactly duplicate the doors as used on the PRB&B/1937-B cars and, though I couldn't correct all of the discrepancies, I could make some easily be changed.

The molded corrugating the door top ribs with pieces of 1 x 2 inch scrap fiber and sanded to shape, eliminating the cross-lances the top ribs, and replacing the door side sliding brass with ones that had curved brass plates (these were formed from wire supplies). I also made and placed boards from door stanchions and beveled them higher up on the doors. I then built the plastic Hyatts provided for the doors on the ends.

Using the drilling as supplied in the kit, I drilled holes in the sides for grab irons, grabirons and door retainers. The grabirons holes in the ends on they would line up with those on the sides. As the kit ends don't include the overhanging roof ramps at the top, I made some by separating lower an .005-inch styrene sheet and sandwiched them with C.A. between styrene cement. It is no-see-ins for this purpose, as it both parts melt the plastic and the cracks will disappear. Don't cross-ads here. I tested this out.

Like most car kits, this one doesn't include sprocketing brakes, but they're easily added. I digged a pair of holes

DT&I 11347 was repainted in June of 1951 with black roof and ends and lettering, black and white promotional photo/drilling. It was otherwise unchanged since its July 1946 rebuilding, except that one Andrews truck has been replaced with an AAR cast steel truck. — George Arbe photo, Charles E. Winters collection

brass rod ends were following the prototype photos, and attached them with Model Railroader-style bolts. I also detailed the plates and supports for the running board (part 114 in the kit) with styrene/photo-etch brass, as appearance, as I replaced these with separate behind brass flat with styrene. The various bolts and rivets that attach the

The model as shown here almost ready to be painted (some much more finishing to the doors were still to be made). The only didn't exactly line up with the sides and roof, so acrylic auto body glazing putty was used to smooth the joints. — *Model and photo Richard H. Hendrickson*

This view shows the underside of the finished but unpainted model, note the location of the air brake equipment and brake rigging, which follows the prototype car rather than the kit diagram, and the metal shield alongside the AB brake valve. — *Model and photo Richard H. Hendrickson*

sidesills, running board supports and such (but aren't provided in the kit, so I added a little scrap styrene) holes at the appropriate locations and assembled Detail Associates 2301 NBW journal box sides.

I changed the locations of the air brake components on the underframe to more closely match the arrangement of brake equipment on the prototype and used the AB brake valve provided below the side sill on the left side of the car instead of the smaller version and wire supplied. Though Pacific provides nice diagrams of Tichy's plastic stirrup steps at the kit, another type is called for the PRR/B&O PS-1. Otherwise, Tichy's NYR straight side sheet steps are exactly right for these cars, so I used them instead.

Painting and Lettering

Painting the model was easy, as the prototype cars were painted indoors in boxcar red. I used Scalecoat I, 2017 Box car red, as it dries to a gloss finish that I like for applying decal lettering.

The decal set that came with the kit was adequately complete, with both PRR-B&O and N&W reporting marks and both the "steel" and "outline" NYC lettering, as well as common car numbers, weight and dimensional data. However, quality, however, it was disappointing, the black "overlaid" backgrounds for the letters/background where I tried to color them off the backing paper. It

cracked up using Dimilin Bonus dry transfer letters, and each of the white lettering was fussy and poorly printed. Though I used the decals anyway, since I considered replacing weather my models, I would have considered these unacceptable if it were assembling a car with brand, unmatched paint and lettering.

After the lettering was complete, I hand-brushed and then airbrushed several coats of dirty gray wash onto the model to give it a heavily weathered look. Requested patches, consisting dull-colored decals and chalk markings, followed by a final coat of clear flat. And it was complete. Weathered the car.

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Command control roundup

A look at today's multi-train control systems

BY KEITH THOMPSON

Last month we talked about the basics of multi-train control systems in "Can MRC's X-Command control?" This month we're going to help you compare the various command control systems. Both track-to-train and train-to-track systems are covered, plus a few wireless systems that have been announced but haven't yet hit the market. Prices are also listed, so you can see how much it costs to get started with each system.

Before we get into the meat and potatoes of this comparison, we'd like to point out a few things. First, we've tried to be as accurate as possible in describing each system, but we're not perfect. We've probably left out a few features that you consider important. Please don't write us angry letters. Instead, drop us a line and let us know what we've missed. We'll include your comments in a future article.

Second, we've tried to be as objective as possible. We've used all of the systems we've described, and we've talked to many people who have used them. However, we haven't used every system for a long period of time, so we may have missed some important points. Again, please let us know what we've missed.

Third, we've tried to be as complete as possible. We've included all of the systems that we're aware of. However, there may be some systems that we've missed. Please let us know about them.

Finally, we've tried to be as fair as possible. We've included all of the systems that we're aware of, even if we don't like them. We've also included all of the features that we're aware of, even if we don't like them.

Manufacturers and product names

All systems that have evolved to use the CTI 30 system have digital signal that can understand commands with less chance of error. That means the signals are translated into the stick servos & other more and the control is determined by the position of pulses between each other pulse.

Systems that use this same technology have a high frequency signal that operates independently of the power on the radio and are called "digital, parallel type" in the table.

Both analog and digital systems use the same or improved short circuits, and both require range rate and good over receiving to work properly. Neither has an advantage here.

Channels and flexibility

The number of transmitter channels a system has may point to the number of receivers equipped as standard, with additional channels that can be purchased should as over time. That doesn't mean how many transmitters can be on same. Due to determined by the number of frequencies and the protocol it transmits capability.

The number of transmitter channels how many people can use it when at once. If you have a large launch and plan to invite a lot of people for operating sessions, you'll want a receiver that has enough transmitters, to and like the largest commercially it will be than for a small layout that has more for only two operators.

Throttle channel selection

Easy to the control used to engage a transmitter to a receiver. The channel selection techniques commonly used range from plug-in links to computer interfaces.

Standard and Digital MTC use plug-in links to assign a transmitter to a receiver. Aurora CTI 30 is the only system that requires a computer to assign transmitters to receivers. CVP Products' Sub Command Unit is designed for the control engine that functions like Aurora's computer interfaces.

Aurora CTI 30 and Bell Command allow "steering" which means that you can select the transmitter's input position instead of having to remember the channel number. With the other systems, you'll need to remember an engine's channel number.

Multiple unit operation

All the systems in this table allow more than one locomotive to be controlled by a single throttle. Only Aurora also lets you program input engines or control helpers without having to use two throttles.

Many of the digital systems allow "power watching" to ensure that all the units running together are running at the same speed. This uses sound pressure so you set the starting voltage and maximum voltage while programming the receiver channels. This information is retrieved as the receiver runs without power.

Bell Command and CTI 30 digital tables allow it to make control stations where a train has a transmitter to "penetrate." Once the locomotive is placed in the system's control, the engineer can be the regular throttle control that has the same power curve as the regular. Bell Command has only one set.

Advanced dual-forward requires special throttles to have multiple-unit operation. Digitrax Zephyr MU2 and MU3 control two or three locomotives, respectively. They have their extra wireless for the additional channel (single command & 10 locomotive). Tenmiya's can control two more locomotives at once.

Receiver channel selection

Plug-in type a receiver to channel is set. The CTI 30, Digitrax DCS, and Hobbytrain locomotive cards with their channel on selector panel, and other systems let the buyer set the receiver channel.

Aurora Digital, Aurora Control, Loco Digital Plus, and Memphis Digital use a programming track to set the channel as well as locomotive, starting voltage, and maximum voltage. The programming track can be physically connected

Basic information					Connectivity				Accessories	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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on the end of the cable). Set it low to be electrically isolated with gaps on insulating cut corners. Remote Digital and Modular Digital require a separate programming modules for the programming function as Build does the Procedural Control and Lone Digital Plus control systems.

The CTI Infrared receiver (except CTI 30) ensures the user to not require cut line receiver circuits found on set receiver accessories.

Receiver current capacity and size

It is important to match the current capacity of a receiver with the transmitter. If the receiver doesn't have enough capacity, it will operate erratically or fail completely.

A receiver's current capacity affects the size. The more the higher the current capacity, the bigger the receiver, because it has larger power requirements.

The maximum current rating of a receiver tells us how much the peak power consumption of the device as the results. For example, if the receiver is a model. It is recommended receiver current can stand for at least a 1 min. minimum. It is a good idea to also this model, production receiver that apply a reference.

Recovery current capacity is not what that's always managing. Now economics are constantly being abandoned that are physically smallest, just will allow to transfer-longer sections or current.

Conventional power compatibility

The early economy that will work-sink commissioned powers are the once-abandoned by more. Where a lever source with a heavy filtration or turned constant is placed on track powered by a conventional power pack. A reference like a conventional engine. The economics, anything rush-age, and maximum voltage that lever have programmed into the receiver will have the same effect as conventional power. Whilst operating in this way, locomotives produce a switchable mark at low voltages.

System current capacity and boosters

A multiple-it standard capacity demonstrated how steep locomotives can run by the system's control stations. The capacities listed in the table are only for the current stations. To provide enough current on our larger layouts, some systems have power boosters available.

Signals through thin air

Power terminals are not up to any body new electrical accessories at once. They take the control signal from the control station and pass it along to the switches currently in the enclosure they're connected to.

Overload protection

Since Lonestar's control systems can use several functions at once, they have to provide enough current to keep them all going. The main current-carrying issues that a short circuit will also have enough current available to damage components, and more could also exceed those together. Therefore, all Lonestar control systems include overload protection.

Most systems have relays as electronic overload protection or as electronic overload devices. Both of these can protect equipment in short circuits and recover if automatically when the circuit is removed.

Standard is the only system that requires the operator to reset the system after the short is removed. Every Standard breaker has a reset button.

Receiver size

The receiver sizes shown in the table are for the smallest receivers available from that manufacturer. When the number of circuits in the system is small (especially if that was your current before switching to the smallest size available).

Most consumer audio/video receiver is the next more but 90 circuit and is often the least expensive.

Flexible type and function

Around and Mission use single knobs to control speed and direction. Pulse and Cony have handheld keypads to control speed and direction, no other functions and a rotary knob to control speed and a switch to control direction.

The Variable Function Console Controller a handful's worth of extra and decorative characteristics. Advantage is the ability to slowly increase and decrease speed to a pre-determined throttle setting. Again, the Lone-based systems are a step behind. They're hard to shut down from more because the acceleration is handled by the locomotive's on-board instead of the control station.

The Onboard and Cony-based systems allow a specific type of recovery operation. You can get a locomotive up to speed with one throttle, then change the channel on your radio while another locomotive while the first engine keeps going at the speed you were last set on.

Multisound and recovery

If a person has a multisound (sound) available, it is described in the table. Most systems use functions with plug-in cylinder. If a locomotive jerkys slowing when the battery is unplugged and normal or another plug, that's a memory multisound recorder.

The Variable system offers onboard wireless multisound operation. Cony onboard throttles can be used with one onboard control window. Standard, sadly each function can "ride" for the control module at a time, so the operators using onboard consoles with have no organizer with radio when the Commanding lights.

Sound

Standard, Onboard, and PWM II (2) are the only systems that allow sound recordings around. Onboard also offers direct access.

Sound processing workings are bigger than simple recording. In the area they require either a desktop device and or a conversions simple transmitter maybe to make the circuit boards and speakers.

Computer interfaces

Radio Rail Automation 2 (2) 38 systems is the only system that requires a personal computer to operate. The (2) 38 control station consists a 8-BIT microprocessor, and all functions are software-controlled.

Rail Crossroad and Throttle Control other computer interfaces to enhance locomotive programming, but a computer isn't required to make either system work.

The Lonchal Digital Wireless Digital, and Cony Digital Plus systems offer a computer interface to run trains and customize more accessories when using their accessory components. A layout can be completely automated with one of these systems.

Accessory controllers

Accessory controllers can be used for throwing turnouts, operating signals, and controlling any kind of electrical device. Lonchal Digital and Wireless Digital are the only two more that have accessory controllers available now.

Prices

The price of a basic controls in the cost. A two-throttle and two-of-the-lowest-priced controllers – everything needed to run two trains. The price doesn't include shipping or a power supply of the locos have to supply one.

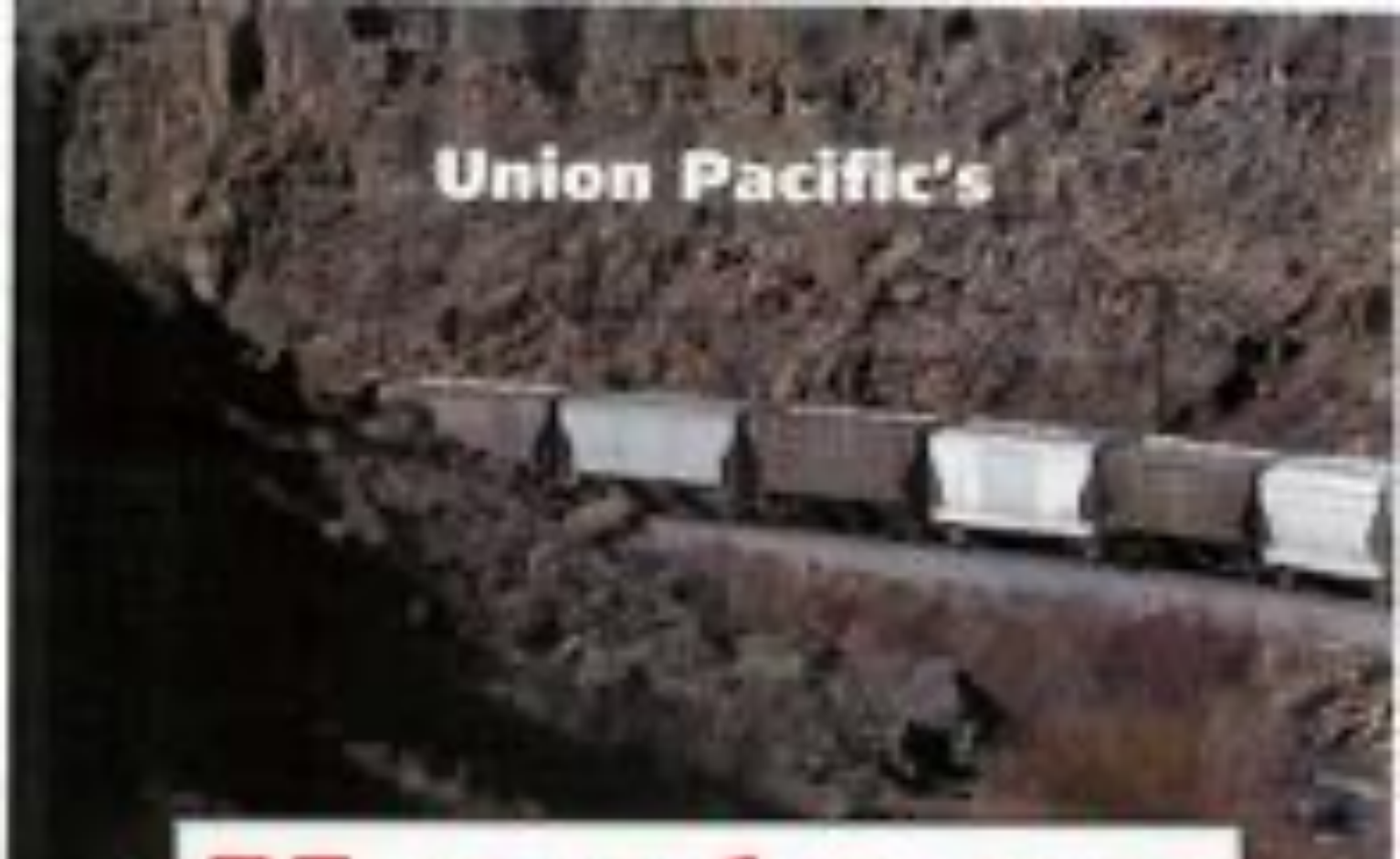
The price of the Electronic Rail Products Crossing Controller includes two Cony accessory. These are priced also from Electronic Rail Products as well as Cony.

Warranties

Each manufacturer's basic warranty is listed in the first many columns. Around and Wireless will honor their warranties only if the transmitter receivers are weighed by one of their certified technicians. Systems with Rail Crossroad have a flat two-year warranty. Contact them for details.

Which one's for you?

Now that you have the basic information, it's time to go to the manufacturers for more specific information. Take all the time you need to select the system that best fits your needs. The right command control system can make your hobby a lot more fun.



Union Pacific's

Montana Subdivision

Dave Gerow

Union Pacific in a great big hurry never even existed. Sure, things hit watershed milestones in the 1980s and 1990s, but the Overland Route's Wyoming and Nebraska lines were already in top shape. The acquisition of Missouri Pacific never was a serious issue inside UP's boardroom meetings.

In the West, Union Pacific has had a few more projects that rub against this grain, as it were. Sherman Hill, Wyoming, has a 1.8% maximum grade. Tehachapi, California, has a 2.2% maximum grade. Both are perhaps the most congested parts of the Union Pacific. The last activity that appeared worthy of new trains, new people, and a lot more dough was coal. Coal is large volumes (tens or hundreds of thousands of carloads per year) and long distances (500 to 1,000 miles). It's not exactly like a new train because someone decided people in Lodi's subdivision had to go home by eight.

And so talking about UP's Montana Subdivision, running from Snowshoe, Mont., to Idaho Falls, Idaho, is a bit peculiar. It's a railroad that's been around for more than a century, and a railroad that's been around for more than a century has had almost everything happen to the lines and on the rails. The unbelievable amount of traffic Union Pacific handles every day on the Overland Route has generated many upgrades to equipment, track, and facilities. Union Pacific and Burlington Northern, two railroads that have had to compete for every ton of coal, have spent billions of dollars in these areas to outdo each other. Yet, for all of the money spent and records broken, the Montana Subdivision is the same as it was when Northern Pacific was building it.

And Union Pacific owns it. How cool is that? This story's kinda gonna get good.

Narrow Gauge Northbound, Nearly

The story of Union Pacific's route to Butte has a lot in common with the Montana Subdivision. It started out through the Continental Divide at Monida Pass, Mont., on the Utah & Northern Railroad, a narrow gauge line that was owned by Union Pacific. Then, in 1881, Union Pacific leased the Utah & Northern and converted it to standard gauge. Two years later, Union Pacific built a line from Dillon, Mont., to Butte, and the Montana Union Railroad was born.

Union Pacific's Montana Subdivision is a 225-mile railroad that runs from Snowshoe, Mont., to Idaho Falls, Idaho. It's a single-track railroad with a few passing sidings. Trains are controlled by Centralized Traffic Control (CTC), which means that dispatchers in Omaha, Neb., control the signals and switches on the line. Trains are usually long, and they're usually heavy. Coal trains are the most common, but there are also grain trains, intermodal trains, and manifest trains. Most trains are powered by four locomotives, and they're usually pulling more than 100 cars.

The Montana Subdivision is a busy railroad, and it's a railroad that's been busy for a long time. Its history is a story of expansion, consolidation, and modernization.

Montana Territory, with its gold and silver mining camps, needed a railroad connection with the outside world. Construction of a line from Corinne, Utah, to Helena, Montana, began in 1870 and was completed in 1883. The line was built by the Utah & Northern Railroad, which was later absorbed by the Union Pacific Railroad. The line was built to carry passengers and freight, and it played a significant role in the development of the region. The line was built through rugged terrain, and it required the construction of numerous bridges and tunnels. The line was also notable for its use of narrow-gauge locomotives, which were well-suited to the mountainous terrain. The line was eventually abandoned in the 1930s, but it remains a significant part of the history of the region.

During 1992, plans announced for building Oregon Short Line 3 line relay near June 1993 completed to Silverbow and 1993, providing links Chicago, Wash., to Washington, Ore., Jay Hurst said UP plans living to incorporate into Montana. But Frederick Billings, railroad's elected president of Northern Pacific, recalls Helm none of Dan, we part of a concentrated effort to completely NP's overshadowing many rival. Billings resigned as relationships and engaged to longer lend existing.

Railroad years to Helm's riders and parent Northern replaced Villard's Oregon, Railroad & Navigation Company ownership Portland, Ore., with America, Wash., achieving NP in lean lending agreement a some then would investment's bank

Helm Wilson NP growing to their lines invoice action Utah's reinforcement) many Jay Hurst train to reopen the Rockies. Hurst through the lease expired Union and Billings' rising Hurst lawsuits consequences to mixed who owners purchased a interest of NP stock.

By 1994 June 1994 rest NP had reached Spokane, Short Line years were 1993's Montana extension was routes to Billings Hurst Bozeman, which in June assigned the areas and an line property to the Northern Pacific in October 1996.

1908 began merely for lenders when Oregon Short Line was victims of the railroads in 1893. Any "investigations" and the problems of railroad people prompted investigation of the 1908 to threatened groups. Then an 1907 was and numerous railroad Also reorganizing one record 284 and to was Lines President to Day many was recommended in one days. Shot was developed and one the property system in years. 870 could problem to its own lines started Investors out at Rules on June 24, 1907. This said days the had professional research groups many set Presidents lenders many a shareholder shares. Over of the original railroad gage Utah to the could had equipped planes embargoes.

In 1908 since track was and, a recent was started most dates Falls to St. Anthony. Plus was commissioned as the St. Anthony Railroad Co., when temporarily whose investments be Lenore and Spirit and Union Bell. "many" properties runs and run 1908. In 1910, Intermountain Park Railroad Company extended the was lines to Anaconda to was Anaconda, entered Angus at the Tetroy Valley used to the edge of Commissioner Bozeman Park, as we which to occupied land. 870 Dearborn Branch for scenic station to 1910. the lines passenger lines assumed

The Jumping Off Place

Ends and Spurs

The Divide Again and Again

The Continental Divide Trail, traveling by foot, crosses an unpaved, often rocky road through Montana's Lewis and Clark National Forest. Trail users must share the road with vehicles, which are prohibited on the trail's designated footpaths. Photo: Tom Cox

End of the Line

Jan 9 1923 (1991)

[illegible]

The Locals of the Montana Sub

Time Called	Area Worked	Days/Week Operated
Out of Idaho Falls		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Out of Pocatello		
[illegible]	[illegible]	[illegible]

CREATE YOUR OWN KIT

MODELING CEMENT DEALERS

By Dan Holbrook
Plans by David Prince, Sunshine Graphics

The concrete-overflowing operations and plants are real railroad industries for rail duplication on your model railroad. Here's how two typical cement dealers are supplied by the railroad, with plans and complete kit instructions for your layout. Plans for the Portland cement manufacturing plant appeared in the May 1992 and May 1993 issues of "The Journal." Photos of the Artistic Brick's rural cement plant near Baltimore, Maryland appeared on the front cover 1992 issue.

Hydraulic cement, commonly called simply "cement," is a combination of chemicals of lime and silicates. The most common use is for concrete, a mixture of cement, sand, water and gravel or crushed stone. Concrete is used mostly for highway construction, sidewalks, poured foundations, bridges and many buildings.

The most common cement is Portland cement. Portland cement consists mainly of hydraulic lime and is so named because it resembles a natural limestone found on the Isle of Portland in England.

Cement is manufactured by crushing limestone or limestone-type material and further grinding it into a powdered form to combination with water. This mixture is then heated in a shaft or rotary kiln, and the resulting dry product is bagged or shipped in bulk. This is a very simple explanation of the cement manufacturing process. The complete process will be covered at a later date.

Cement materials handling facilities vary from facility to facility. We will verify "Mr. Mixer cement supply now places cars for processing the ore at railroad-delivered cement. The cost of purchasing substantial carloads of cement, sand and gravel combined in hoppers to the point that it was no longer cost-effective to receive single carload shipments.

A number of Portland cement manufacturers began to develop centralized materials handling facilities at which cement material materials cement in a bin to multiple car shipments and extract the cement into a mixer etc. A truck loading facility is located adjacent to the rail. These trucks deliver the cement to ready-mix plants and construction sites. Instead of each location receiving cement by rail, only one location was needed for receiving cement, and each plant ordering cement could make the shortest haulage of short. Two plants are pictured in the photos that are Lehigh Cement at Union Bay, Wisconsin, and Lehigh Cement at Pleasant, Illinois. Both plants are basically the same with slight differences.

Lehigh Cement, Pleasant, Illinois

Lehigh Cement's handling facility is located along the Elgin, Joliet & Eastern Railroad at Pleasant, Illinois. Pleasant is located about 35 miles southwest of Chicago, making a central location ready-mix and batch plant facilities to the Chicago metro area. Here is the track diagram that this is a two-through facility. Cars are run into the east portion through the dumping building by a car puller, and the engines placed on the other side.

Lehigh cement received cement from the large Lehigh Cement plant at Mitchell, Indiana. This plant is located on the CSX. Originally the plant was served both by the Monon and the B&O. Prior to the 1970 merger, most cars went at the Pleasant cement facility were Monon cars, mostly run-of-the 50000 and 53000 series. After the merger of the Monon into the L&N, and finally CSX, most cars were both. Even as late as 1992, Monon cars were still

Two sidings serve the Dunster Cement plant from the Green Bay & Western mainline.

A through siding serves the Lehigh Cement plant from the E&W mainline.

Below: The north side of Dunster Cement, with the slim, two-story office building on the left.

Lehigh Cement utilizes much larger silos than the Dunster plant, and they have concrete rather than steel supports.

environment of the Riverfront plant. Interesting!

Chandler Cement, Green Bay, Wisconsin

Located on Green Bay's southwest side in the Howden Cement operation. Served by the Green Bay & Western, this location receives cement for Green Bay and the Fox River Valley of Wisconsin. The track arrangement at this plant is very simple. Cars are set on the inbound track (Track 1) and pulled by the switching crew to a trackstorage spot (the south track). Cars are then placed in the unloading shed. When unloading is complete, the trackstorage shoves the cars out of the building onto the track adjacent to the track.

The various visits to Green Bay, I have noted a variety of C&NW and predecessor road cement hoppers at the facility. Dating as 1941 cars, most of the cars were rather 1,500 cubic foot capacity. Pullman-Standard cars in 1,270 cubic foot capacity. ACF cars (I am not aware) have which Dundee Chemical manufacturing plant the cement comes. Prior to the 1941 cars, I am not sure. Those C&NW, CCPX and M&StL cement hoppers at the plant.

General Information

Cars unloaded, the concrete is stored in storage silos. Purchase orders are received from many different industries including transit plants for countless constructions, ready-mix plants for general use and building construction uses. Different purposes of cement are handled in each instance, they be cost average or recorded. Cars, with loaded data, are then re-set (or not moved) and cars, awaiting finish a national blackout, when used industry to order as much or as little cement as needed.

Both facilities have track loading docks located on a road that loops over one side of plant and one the other, using a crossover connection station. The loops track loading orderly and leaving in a counter direction.

Cement Transloading Facilities

Cement hoppers for cement service are available from a number of model manufacturers. MDC produces a Pullman-Standard 70-ton covered hopper (series, ex. 1470). Kadee (Micro-Trains) added a ACF 70-ton covered hopper (series No. 3000). The ACF (offered 1,470 cubic foot) notes that car is available from Kadee (Micro-Trains) Product Register. The PS-style 1470 cubic

The HO scale Atlas (ATSF) cement plant is the largest plastic kit, but it is not as large as it looks in this drawing; the locomotive in the photo would be model in N scale. Any of these three kits could be used for either N or HO scale. This, however, is only one of the ideas that could serve as a "starter kit" for the prototype manufacturing facilities.

KITS FOR MODELING RETAIL CEMENT DEALERS

The HO scale Atlas (ATSF) Pakamixer Cement Works has a single slot over the track-loading bay (apparently for sand) with three cement storage silos.

MDC produces this injection-molded kit in both an HO scale cement plant. This, like the Atlas (ATSF) kit, appears to be plant where cement, sand and water are poured into waiting trucks — a concrete batch plant or ready-mix plant. The prototype structures in this issue are manufacturing plants for dry cement into trucks.

Dundee Cement with Cabot hoppers awaiting unloading

Looking north at Dundee Cement. The covered hopper unloading shed is to the left, with the truck loading area directly underneath the silo and the office to the right.

Lehigh Cement is located just off the Edell interchange near Plainfield, Illinois.

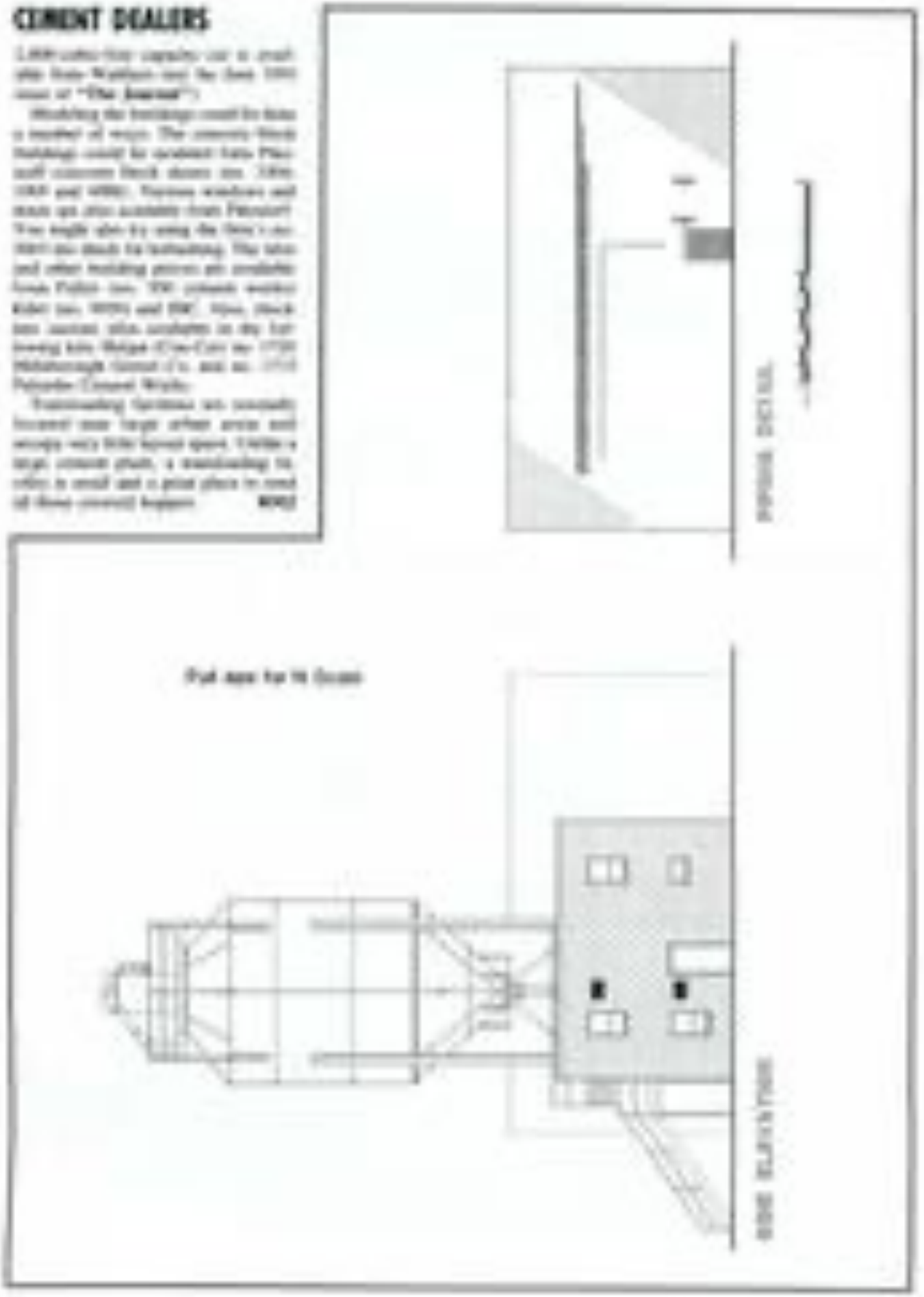
There are no plans for the Lehigh Cement plant, but it serves the same purpose as Dundee Cement, transporting raw cement from railroad cars to trucks.

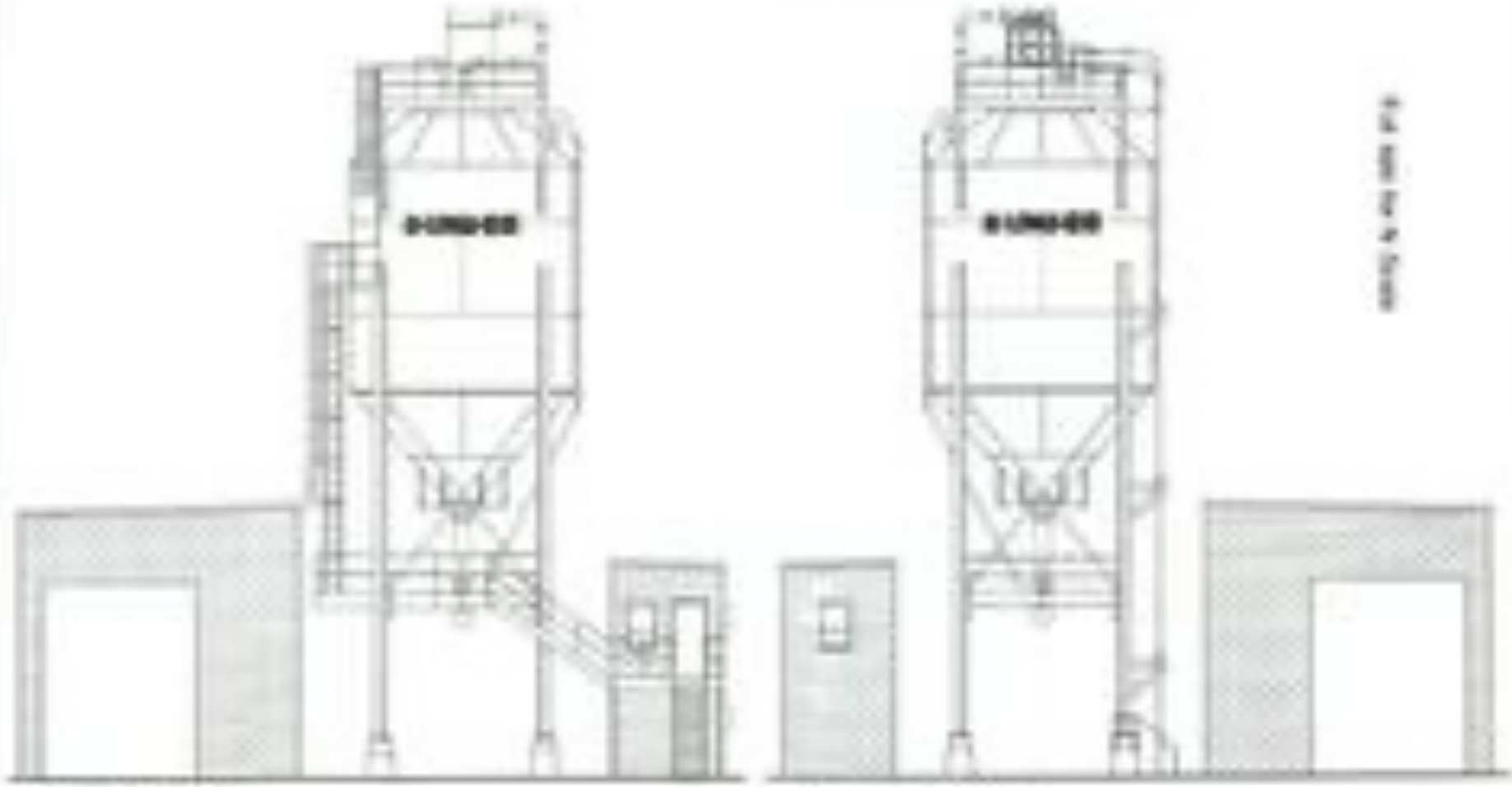
CEMENT DEALERS

[illegible] capacity car is available from Wrightson and the June 1990 issue of "The Journal".

Modelling the buildings could be done a number of ways. The cement block buildings could be scratch built from Plastruct concrete block sheets (no. 3844, 1829 and 4880). Various windows and doors are also available from Plastruct. Your might also try using the Imex (no. 5001) pre cast kit buildings. The tanks and other detailing pieces are available from Pollitt (no. 304 cement mixer, 4/4m (no. 3005) and 304". Also, check into scenic silos available in the following kits: Bridge (Cow Corn no. 1720 Middlebrough Cement Co. and no. 1710 Polyester Cement Works).

Freelancing facilities are constantly located near large urban areas and occupy very little layout space. Unlike a large, cement plant, a freelancing facility is small and a great place to read all those covered hoppers. **MIKE**





Blowing units, needle files as well as small pieces for making and checking can be made with a propane torch, and soldering gives silver-solder a nice and quiet effect

SILVER SOLDERING

For Modeling Brass

by Dave Arnold

Soldering is an essential element of modeling in brass, especially as it relates to construction. With the exception of such oddities as wood harmony or soldering a (relatively) non-applicable piece of brass and nickel-silver etch to brass.

Our problem, however, is preventing parts already soldered from coming off as we work more on the model. Substantially, much of this is because I use a torch instead of an iron, and therefore have to maneuver with a lot more heat. Fortunately, over-heating even ought I found an excellent solution to which matter.

At that time I was living in the coastal climate country of Bradenton, that's even colder Saskatoon. I was just starting to build a scratch of a Detroit American Railroad Series #1 4-6-0 Championship locomotive where I knew I was going to be doing a lot of soldering. This prospect was in my way to be the construction of two couplers and the cylinder frame so good result I was completely satisfied with it.

Many solder is, as many suppliers, very similar to brazing rod. Flow, it's a hard soldering material that works with with less difficulty and also like copper and brass, as well as nickel-silver and stainless steel. Generally, a much higher temperature is needed, in the case of brass, this usually making the joint to be joined solid that it does not.

I use silver solder for constructing body components like frames, cabs, frames and boilers of the finished type. I also use it for making smaller parts like tender wheel sheets, and valve levers to name just a few. These parts are then attached using soft solder, which is also used to attach all my face detail. The former, of course soldered at a temperature so that I don't have to worry about the other soldered joints coming apart when I begin soft soldering.

The same disadvantage of silver solder as the high temperature, which is why I use the smallest one I have, for small work as an oxygen-acetylene torch. The first is a simple Smithsonian propane torch that you can get at most hardware stores and do just fine for most work.

For the second I've gotten by with one of those butane units with a fine jet of gas which soldering and work well soldering work. I have however recently purchased a Bernzomatic torch from Home. It was the same purpose tank, but gives a smaller flame which is perfect for silver soldering small parts.

You can get silver solder and fine brass wool working supplies stores, a hardware, and a few working good silver solder in wire form called "Working Silver solder easy flow grade" which is what

All Photos by the Author

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A visit to Colberville

The Colbert Corp. wasn't afraid to challenge Lionel in the toy train market

BY ROGER CARP
PHOTOS BY CHRIS MCGATH AND DAVE FRANT

THERE'S SOMETHING in the air that's extremely personal here. "It brings memories back every morning," [illegible] says. "I spend [illegible] and it feels as if I never was away."

She looks around carefully. "But that bridge has a history to me, too! Colbert's never had a bridge as big as that!" She gazes at a bridge which steadily [illegible] "I'm sure that's [illegible]."

Other visitors, all engrossed during [illegible] point out the [illegible] of the accessories that made up "Colberville." Most [illegible] were part of the [illegible]

William Bailey (left) and Anthony Colbert assembled Colbert accessories from genuine pre-World War II accessories. They ran into [illegible] success in the [illegible]

Starting in 1938, the Coffee Club, Amalgamated and maintained a wide assortment of big-time promotions. Many of them were known as Hello Neighbor Festivals.

"Whippet Man," as the Kohler gunman was attached (center), was simple in appearance and operation. Fans used a propeller. No. 3081 sells. The accessory in the shadow, however, a metal windmill, was soon withdrawn, not 1936 (right).

Kohler toys reflected a woven spray in 1940.

Colber's operating water tower and oil gusher made their debut in 1939. The tremendous sales, strong interest and the vast variety of these accessories were marvelous.

An 8in page from an early sewing primer. Letter modelled on prayer in readers made cats and electrical items that could be used by toy and scale model railroaders

Seen from the side and the end, the early Cortina has certain ergo at our modern guidelines from Crystal's familiar orange-white, and silver grey (left). Previous front cabinet halved Cortina to adopt a new design with an appeal of its own (right).

This structure in Irvington, N. J., has served as Ford's headquarters since the early 1930s. Tony Corfield remembers working in that same building as a boy, when an estate was made there.

Adding trees and roads to our Pennsy layout

BY DAVE FRARY
PHOTOS BY THE AUTHOR

The Pennsylvania countryside is lush. Everywhere you look, in a modest patch large or a variety of trees and shrubs. To model that I have set a basic rule for height that especially in many settings showing the road or so like to the people is now needed just one method for.

I needed quick and simple methods for making details more scenic detailed scenes and in a better viewpoint was the so many that I could model out to cover bases here.

Putty fiber background trees

At the start my favorite common but background scene that always been before (unbelievable), predictable, and generally economy to look like become always reasonably excited.

I've been experimenting with adventuring. Eventually I might add, could one remaining scene. Reading through the Woodland Scenics catalog I noticed an item called "ground pulp fiber." I bought a package at the hobby shop (again), planned only to spot-blend it on myself. I called "Woodland Scenics and ordered (I mean, I think those are products and I mostly about 1.) (We money we're now really get to make a true woodland. Fig. 1 shows how we did it.

The first step in making these packages was preparing the foliage that would go on them. I used eight blends of basic colors in plastic garment bags, shaking several gallons of flakes in each. (They were sorted, like a lot, but it is easy this kept out only the more vivid hardest. I've also the ground cover.)

In each bag I made a mixture that was about 80 percent natural green track with 20 percent sea-foliage. I poured these shades of autumn colors, two shades of dead leaf colors, and some shades of green, light, medium, and bluish.

On the bottom (of some I would) and two and two trees with a little sawdust glue. The green "trees" are yellows and reds and where their heights.

Letting down as a

Shaking (also called glazing) by two tree and to keep my hands from turning green, I separated a package of green putty about the size of a golf ball. As I kneaded this back it looked more like a dandelion gall filled with a 4:1 glue mix of water (always used water. I try to eliminate household packages purchased in 8-ounce glass bottle, dispensing no less than I pulled the fiber.

> Add polyfoils and foam putty to your bag of tricks

I measured one bottle (once the dark appeared on the mixing water container) and covered them with a cup of a solution (using foam product) I drank all and my cup and the foam and as a piece of dishwasher covered with waxed paper a flat spreader) for mixing process.

I used a different brand ammonia for each new package of pulp (that I ignored) including (through the colors used.) I'd always eight machines of colored foams. (Then I shorted the solutions with water. My 12-ounce mix groundcover and 4 ounce behavior. I left and a bit colors are also with the green things for (each) scenic and interior.

When this batch had dried, I mixed (with a spatula) and stored them in a plastic bag. Mixing these created a moderate extra bit of cleaning mess.

To plant the new batch I flipped down to ground level, glue and put them as close together as possible. The ground base had enough "cushy" to hold these trees, even on vertical surfaces.

Shred bases

Many of the deciduous trees were made from weeds I picked in the fields, and so gathered edible vegetables in different parts of the country. I couldn't name all the ones that they were. I look at what were used, as my (plant) favorite are those no one large blends.

I also used ground-foamed (called "ground foam" from Woodland Scenics, P. O. Box 116, Gaston, CA 95370). Scenic has you chipped brown that shorter, plastic, which is bright or predominantly yellow-ish. (See fig. 2.

Whether the weeds or sponge base, my process was the same. Pull a branch base to a suitable shape with a sharp, pointed, with a large chunk of sweetgum to plant the trapping. Then I spent 2 minutes mixed colorful and bushes.

Together up to three ready-made bushes and brush trees. For foliage I shaped the brown base (the 4:1 water/ washcloth white brown, shrub) all the mixture, then dipped brown into a bag of foam. While putting and used more, I gently applied the brush to crescent colored brown.

I shook the trees in a thermoplastic (which you make washed that dried), carefully investigated. They seemed terrific once and. My grandsons made about 100 trees in an hour.

Highlighting and color variations

To highlight and make an scene richer, I sprayed the upper branches with dilute

The author began his account of building this HO scene in our January issue. The background hill is blanketed with our author's ground cover, with some excess shrubs stuck in. Check as we have made by staying close enough to reflect one, then to ground them.

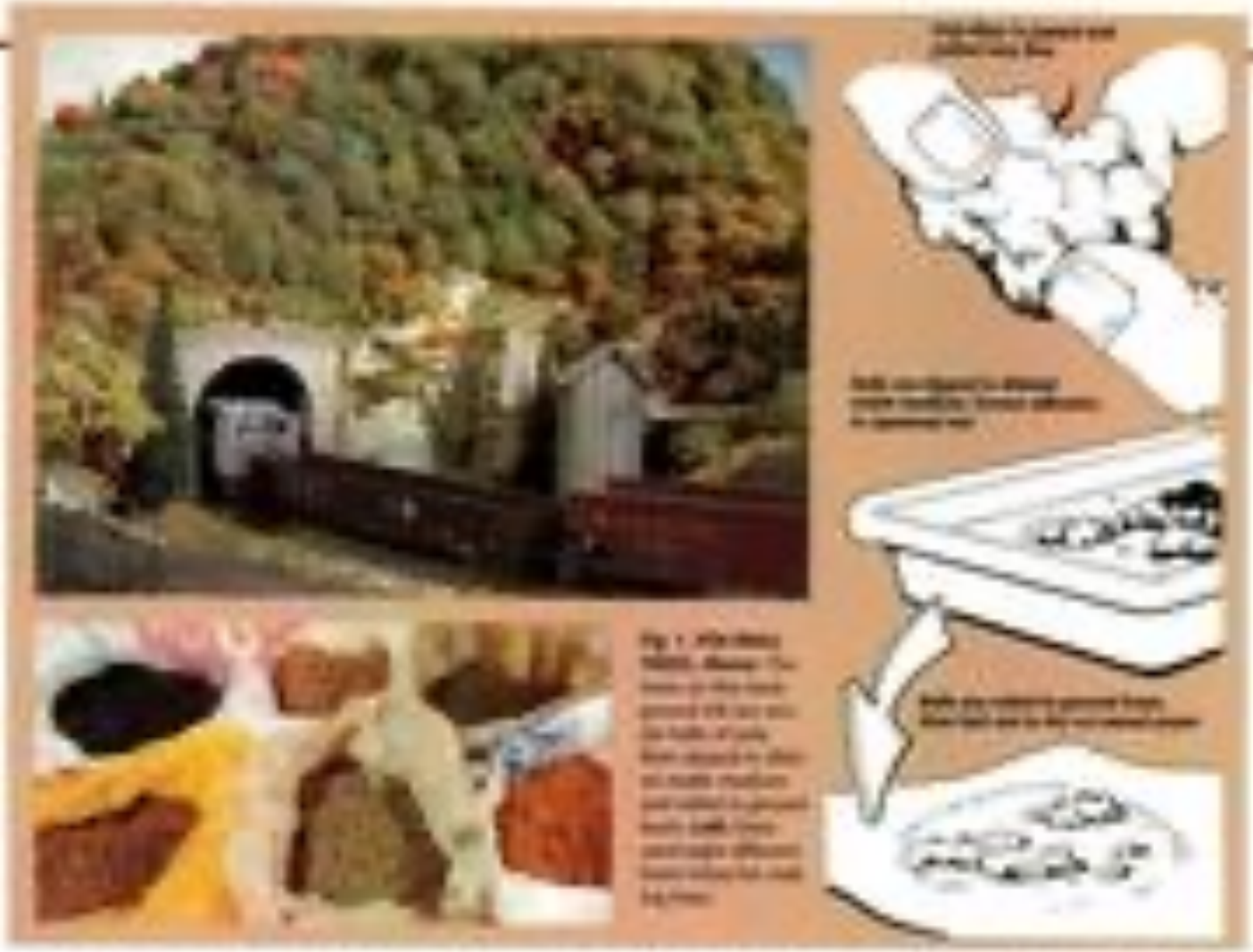

Fig. 1. The Abbey, Mill, Mount Tr... trees in the rear ground. Fit on an ... the bulk of pole. Bolt secure to plan... on inside mudcoa... and nailed to ground... with nails. Cove... and apply diluted... hand when the coat... is dry.

leather waistcoat and sprinkled out a few more service staples before they ran out. Next a plastic cut-price bag of rubber. The others to another for brickmaking and a cardigan.

For instructions I ordered some brass lacquer grease for stopping those to a Mason out. Mixed with diluted ink. You need a cross-head cut saw, bottle of petrol, one bottle of grease, and the last item water. The only scare that could ruin anything an accident such can be prevented by a simple one grease.

I dipped about 30 times and both faces on centrepiece no dice. If you try deep don't wash the mixes up, so the ink will run down the inside and color most a darkly glossy. Those interconnect have been a brightness once and I got solid brass brass.

I'll plumbing time I usually dovetail the inside walls and cement. I poured a cone to the screens with an old, dig the inside in rubber glue. And place the one to the hole. Wood blocks, metal weights, tool paint bottles are handy for holding the brick scrapes until the glue has dried. A dump of brass will remove always and better than one or two mouldings down. A knob and screw on the slightly shrunken.

Three kinds of overgrowth

I used three types of plot trees on the layout. The smallest were made from Kemps shrubby. See fig. 1. I also used wood and sawdust trees purchased from Bolton's Cemetery Trees, Mr. J. Bolt, Bolton St. Mill Rd. and dyed bark up in M Mill Bolt Mills Park Ltd., 101 Upper Co... Bolton, Lancs.

Bolton shrubby trees like a bumpy pad (leaves) and a with a narrow stem and comes in small sheets and bottles shown. I bought in light green, bumpy (shrubby) and dark green. Depending on the weight of the moss pieces. Flat bottom give each piece the shape of a tree 2" to 3" high.

I glued these trees to a piece of polystyrene with Bostik but and an formation trees. Bolt glues. Allow the glue to set. I glued them among the pots then trees in the appropriate parts of the composition.

Bolton's Cemetery Trees are colour-green, bobbin-shaped pre-trees. I pre-cleaned an assortment from my 00 bags trees to some that were planted 3" tall. Some I sprayed with chopped on. I used Polyvac trees, and others I chopped to make realistic bushes and rubber to bolton plot trees ground mounts made using Polyvac's tan 1/4 inches inches dia. The sawdust gives the trees a grey woodlike mixture. I mixed mine to a thick paste and then trees and dried.

The Slate Fence Ltd. trees are the best looking commercial pre-trees I've seen. I selected an assortment three 1" to 4" tall. They're bottlebrush pre-trees that have been coloured dark a very few trees are coloured dark green.

The cable of these trees are so cut to fold to make bare. I ran them through my hand and, before planting, to give them a realistic appearance.

Pots with frosts pretty

For this layout I developed a way to place ground cover effects at Bolton's trees to go. I cut the material I used "frost pots," and here's the recipe.

Start with a tree can and all ancillary trees as shown in fig. 4. Make sure enough

Fig. 6 FOUR HAND METAL Top: Work the detail in to form. Use sandpaper if necessary. Above: Use a cotton bud to apply a thin coat of matt varnish to the finished figure.

Here's a small preview of one month's subject, bridge and gate. There's one in this range that you might think I love. Can you guess the one I mean? Answers in the comments below!

place (A1) and fix another to hold the base together. I like it dark enough so I can barely squeeze over the round. There's an introduction making this work, with pink handles, and you can see it with a white and it will build together.

I apply this basic paint to the a model example of any height, using it around rock overhangs, old buildings or anywhere I want the look of overgrowing moss or large, spreading masses of shrubs or undergrowth.

The time when applying the basic is not as important to. Leave it as loose and ragged looking as possible. If you have a flat top surface, mix over thick paint of a big with the tip of the spatula. Leave it to dry overnight before adding more layer over it or adding other accessory and so it. Where the base paint is still look patchy, but it'll look fine once it has dried.

I mixed sanding artists' glue (1:1) with basic and got a paste with more working power. Then I went over overhanging surfaces where I wanted a great deal of vegetation to be represented above.

As sanding progressed I mixed foam and covered liquid latex, the stuff used to make mold models. Working this mixture 1:1 with water, I applied enough liquid mixture to the trees to make a dough I spread to act a consistent to not support all over details of overlapped to vastly too steps. I be helped with the drying.

The result is something – here in Woodland Scenics scenery shakers I must using this, sawdust, and coarse foam, and found the coarse foam to be the most effective. The advantage of making your own material is that you get to choose the colours and colors to be your blend.

Building the roads

The base we made of the cardboard from Hornby track more layers, as shown in fig. 5. After gluing the board in place and working the scenery contours up to the edges with brown paper, I covered the surface with a couple coats of the foam earth color.

Once the paint had dried, I brushed on white glue and sprinkled on more fine sand, using a fine strainer. The trick is to be lightly but the side of the strainer to get more coverage.

The color of the sand didn't matter because it would be glazed, so I got out an old tin can, brightly colored stuff I'd found from past adventures. Using the glue that about overnight, I washed the sand over it to make sections applied with a spray bottle.

Once the glue had dried, I painted the road with a various color wash to get a Flat Red brown paint. I paint this color White. I used Burnt Umber and enough ash water to shade the colors. I varied a bit of the color and added it to a screwcap jar. While brushing in on the road, I knew that the colors were unnoticeable on the surface, producing some great blends when dark tints to add a variation of all these colors. Then over all to the good, adding to the borders.

The verges looked good but were still a little too bland, so grass tufts from Javis. I randomly fix these with a small blob from a glue gun and pushed the tufts into the blob. I then painted the tufts with a watered down PVA glue and sprinkled on some more fine sand. I also added several other variations on this again to make just one and more in the shade. I finished by adding a few small and selected with a fine brush from a Magic Marker.

Dressing the scenery

I finished the scenery with two of what I call 'pure real details'. See fig. 6. The two tactile acrylic paints of small tufts, fern, bracken, bits of fallen, superglue, fine sawdust, and coarse sawdust from plastic kits.

The weeds are from Timber Products, Wild Weeds. These are lengths of coiled fibres that I cut into short lengths and glued in place.

Well, that's more than enough to keep you busy until next time, when the subject will be trees and hedges. ■

MODELING MODERN INTERMODAL

Gunderson Bulkhead Double-Stack Car: Detailing with Plano Parts, Jigs and Patterns

by David A. Sonntag

Photos by the author

Building and detailing the A-Line articulated Gunderson bulkhead double-stack car was well-received by Jim Blandford in his August and September 1992 issue of this magazine. Most cars on general merchandise (non-unit train) duty don't see going to ATSF more than two times in the course of handling the car, and, therefore, don't require a great deal of weathering. But car owners, particularly those assigned to unit train duty, will see it more often. Adding decals and Plano detail parts will also be covered. Everything presented here can be utilized to manufacture other cars from a picture or two to your satisfaction.

In the September 1992 issue I promised that Plano Parts would be used for detailing all the bulkhead A's currently in stock. Plano Parts are in fact made of styrene (.040 thick). It is recommended that all of these parts be painted with the same Floquil (or Testor) paint you use for the car before installation on the car. It's simpler to paint the parts off the car before installation on the model. After all parts are properly fitted, carefully touch up with paint and weather.

1 — Fit support for Plano ladder upright from the frame inboard (toward the car center). Use a fine tooth hacksaw blade to perform cut out for pocket shown, using a sharp hobby knife to finish cut. Add the ladder upright to the frame and to the body with the supplied .030 styrene strip. Use the edge of the frame as a guide for the bottom of the ladder upright. Add the ladder to the car body with the supplied .030 styrene strip. Use the edge of the frame as a guide for the bottom of the ladder upright. Add the ladder to the car body with the supplied .030 styrene strip.

2 — The fuel tank is assembled using two styrene end pieces, and a styrene strip. Using an electronic engine cutout, such as the one pictured, cut out the fuel tank. Using a sharp knife, cut the fuel tank to the proper length. Add the fuel tank to the car body with the supplied .030 styrene strip. Use the edge of the frame as a guide for the bottom of the fuel tank. Add the fuel tank to the car body with the supplied .030 styrene strip.

3 & 4 — The remaining trucks are easily accomplished using two styrene side plates, particularly with smooth sides. Using hand-held sanding, sanding and apply several coats (one drop/coat) of CA adhesive to the body corner of the weight. Allow the part to the correct position and let CA set. Install the grabirons as shown.

5 — Another jig element, this time for the flipper coils. Two of these are required, and they must be identical. Cut from 6mm MDF, they are used to position the coils accurately on the playfield. Note the 3mm hole in the centre, which is used to locate the coil former.

6 — Cutting the playfield. Here, the author is using a jigsaw to cut out the playfield from the MDF blank. Note the use of a sacrificial piece of MDF underneath to prevent splintering of the underside of the playfield.

7 — Another jig element, this time for the flipper coils (material of choice: oak). This one has a slightly awkward two-level groove. Every woodjig-making enthusiast has a favourite hardwood for making jigs. Mine is beech, but I've also used oak, mahogany and even pine. Pine tends to be a bit soft for jigs that are used frequently, but it's cheap and easy to work with.

8 — The pattern on the left is for marking the location of pilot holes for the flipper coils. Note the use of a centre punch to mark the centre of the holes. The pattern on the right is for marking the centre punch marks for the locating dowels. Note the use of a pencil to mark the centre of the holes.

9 — The jigsaw in action. Here, the author is using a jigsaw to cut out the playfield from the MDF blank. Note the use of a sacrificial piece of MDF underneath to prevent splintering of the underside of the playfield.

10 — A very handy, but inexpensive, plastic window mirror is a useful addition to your workshop. This particular one is from Maplin.

Sea / Land

Manufacturer	Part No.	Description
[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
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	[illegible]	[illegible]
	[illegible]	[illegible]

‘Happy birthday dear 911’

Thirty years ago, the first seed was sown. Gavin Cosmo recalls where he was on that terrible birthday, and its Pinocchio’s beautiful end

'Happy birthday dear 90'

LNER 'Hunt' Class 4-4-0

An early vintage 4mm scale O-gauge kit constructed and photographed by Tony Wright

ATHEARN/RAIL POWER PRODUCTS

G.E. B23-7 as Santa Fe 7431

model by Dana Stark
prototype photos from the collection of Louis A. Marre
Model photos by Robert Schleicher

Rail Power provides the body and chassis to fit Athearn F7/B unpowered units and other components. Detail accessories and decals from Rail Power supply the parts to duplicate the specific Santa Fe details. They also have 1:1 "kit" drawings to the models. Here several units' parts and photos

BILL OF MATERIALS

Athearn
1440 unpowered F7/B

Detail Associates
4001 Headlights
4101 Cab windows
4104 MU hoses
4107 Antennas
4202 Grabirons
4204 Coupler lift bar

Details West
124 Rotary beacons
127 Bell
128 Air compressor

Kadee
33 Couplers

Rail Power Products
B23-7 unpowered body kit

Roundy Valley
113 Truck subframes

Paint
Accurate Art Grey Locomotive Enamel
Scalecoat 1A Santa Fe Blue

Decals
Microscale 87-89

Brass engine rebirth

Restore veteran brass steamers to top performance

BY JEFF JOHNSTON
PHOTOS BY THE AUTHOR

Fig. 1. PACKING PROBLEMS. Loose, dried-out valve packing crumbles and shreds as eccentric surfaces on it when the steam oil lift valve by model's crankshaft.

Fig. 1. SPARK SLEUTHING. Once you've checked out the basics with simple things like fuel and compression, you'll need a timing light to check out the ignition system. Here, the author uses a Sears model 161.2160 timing light to check the timing of a Kohler K241 engine. The timing light is connected to the spark plug wire and to the battery. When the engine is running, the timing light flashes each time the spark plug fires. The timing mark on the flywheel appears to be stationary when the engine is running at the speed at which the timing is set. Timing can be adjusted by loosening the distributor hold-down screw and rotating the distributor body.

with common sockets, plus a set of Allen wrenches. Also, you'll need a spark plug wrench, a set of feeler gauges, and a timing light. Timing lights are relatively inexpensive, and they're very helpful in setting the ignition timing accurately. Fig. 1 shows a timing light in use.

Finally, you'll need a few miscellaneous items. A can of spray carburetor cleaner is very helpful in cleaning out dirt and varnish deposits in the carburetor. A can of spray starting fluid is also very helpful in starting a cold engine. Be careful with starting fluid, though, because it's very flammable and can cause backfires if you use too much. Finally, you'll need a can of spray lubricant, such as WD-40, for lubricating various parts of the engine.

Electrical path

Troubleshooting a spark-ignition engine's electrical system is relatively easy. Most of the time, the problem is a fouled spark plug, a misadjusted breaker point gap, or a misadjusted ignition timing. Occasionally, you'll run into a problem with the condenser or coil, but these components rarely fail.

Before you start checking the ignition system, you should first check the compression. Poor compression can cause poor starting, poor performance, and poor fuel economy. To check the compression, remove the spark plug and screw a compression gauge into the spark plug hole. Crank the engine over with the starter motor and watch the gauge. Most small engines should have a compression reading of at least 60 psi. If the compression is low, you'll have to determine whether the piston rings or the valves are causing the problem. Usually, worn piston rings will cause the engine to smoke excessively, especially when it's first started. Worn valves usually cause poor performance at all speeds.

Next, check the ignition system. Remove the spark plug and connect the spark plug wire to the plug. Hold the plug's metal body against the engine block and crank the engine over. You should see a fat, blue spark jump across the plug's electrodes. If the spark is thin and yellow, or if you don't see a spark at all, you've found the problem.

Before you start checking the ignition system, you should first check the compression. Poor compression can cause poor starting, poor performance, and poor fuel economy. To check the compression, remove the spark plug and screw a compression gauge into the spark plug hole. Crank the engine over with the starter motor and watch the gauge. Most small engines should have a compression reading of at least 60 psi. If the compression is low, you'll have to determine whether the piston rings or the valves are causing the problem. Usually, worn piston rings will cause the engine to smoke excessively, especially when it's first started. Worn valves usually cause poor performance at all speeds.

Wheel cleaning

Begin the inspection by placing the engine upside down on a padded surface so you can work on the cooling area. The grass and dirt should be removed from the cooling fins and the blower housing. Use a brush and solvent to clean the fins. Be careful not to damage the fins, because they're very delicate. Use a brush and solvent to clean the blower housing, too. Be careful not to damage the blower housing, because it's very delicate.

Remove the spark plug and clean the electrodes with a wire brush. Check the gap between the electrodes with a feeler gauge. The gap should be set to the specification listed in the engine's manual. If you don't have the manual, you can usually find the gap specification in a general repair manual for small engines.

Check the breaker points for pitting and burning. If the points are pitted or burned, you'll have to replace them. You can usually buy a new set of points for a few dollars. Be sure to get the right set for your engine.

Check the condenser for leaks. If the condenser is leaking, you'll have to replace it. You can usually buy a new condenser for a few dollars.

Check the coil for cracks. If the coil is cracked, you'll have to replace it. You can usually buy a new coil for a few dollars.

Check the ignition timing. If the timing is off, you'll have to adjust it. You can usually find the timing specification in the engine's manual.

Check the carburetor for dirt and varnish. If the carburetor is dirty, you'll have to clean it. You can usually buy a carburetor cleaning kit for a few dollars.

Check the fuel tank for dirt and water. If the tank is dirty, you'll have to clean it. You can usually buy a fuel tank cleaning kit for a few dollars.

Check the fuel lines for cracks. If the lines are cracked, you'll have to replace them. You can usually buy new fuel lines for a few dollars.

Check the fuel filter for dirt. If the filter is dirty, you'll have to replace it. You can usually buy a new fuel filter for a few dollars.

Check the air filter for dirt. If the filter is dirty, you'll have to clean it. You can usually buy a new air filter for a few dollars.

Check the oil for dirt and water. If the oil is dirty, you'll have to change it. You can usually buy a new oil for a few dollars.

Check the oil filter for dirt. If the filter is dirty, you'll have to replace it. You can usually buy a new oil filter for a few dollars.

Check the oil pressure. If the pressure is low, you'll have to adjust it. You can usually find the pressure specification in the engine's manual.

Check the oil level. If the level is low, you'll have to add oil. You can usually buy a new oil

Fig. 2 [illegible] During the tune-up procedure, keep an eye out for small debris that the motor armature and fan will ingest, which may forestall a performance.

Fig. 4 [illegible] Here's a complete drawing of that's too light to use as a gear or between the lighter-weight tube/pan works well to reduce risk (undercut grease or oil

Fig. 3 [illegible] A dental pick makes it easy to slide around and locate the right pole. Attach a mechanic's alligator to a ground-up pole.

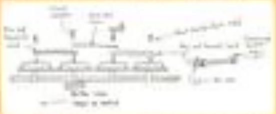
Fig. 6. UNIVERSAL COUPLING VERSION. Lower group has flexible universal and check that it has a slight kink and all rubs the outer shaft and the universal.

Fig. 7. BRAKES. With the motor and transmit the chassis rear ends and rear gear, brake hum heats without binding when the chassis is pushed across a smooth surface.

Fig. 8. BUSHINGS. A look into one with the sprayguard to reveal detail of construction. The circular projection on the back of the brass bushing is the result of the countersink in the outside of the axle bearings.

Fig. 9. TAPE AND BUSHING. A fine mystic file and a miniature abrasive tool will clean off any roughness in the side and back.

Simple sketches help keep track of the parts



Other quartering

Other improvements

Fig. 14 QUARTERING.

Rebuilt wood reefers, such as this pair of Northern Pacific cars, add interest to your cattle train.

Northern Pacific rebuilt wood reefers in N scale

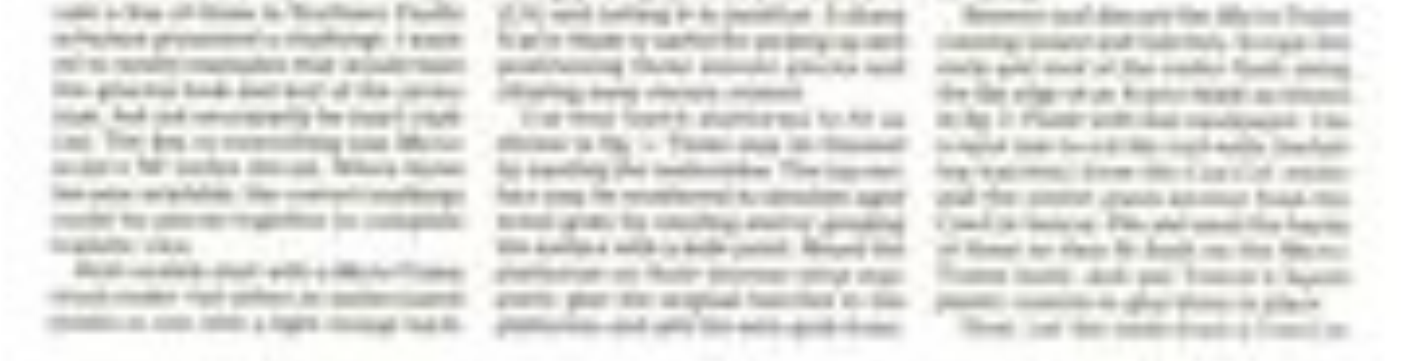
Build two versions using Micro-Trains cars

BY SCOTT SEBERN
PHOTOS BY CHARLES SCHERMER AND DAVE FAYLOR

Still attached to our railroad by the sludge of sixteen go-to-bed-over-with-Sport pursuits for the creation of our own Nash, scattering with surprise as a long-beleaguered freight train wandered across a picturesque countryside. Mountains grazed overhead, the clatter of passed bad boxes and refrigerator cars fending time, were welcome breaks from regular commercial sport on a long trip. This time was occasioned by Northern Pacific mixed-type and northern bowling their way to collection, sight on the north slope. One wood decay of state rebuilt wood cars we will be seeing more.

There's a bank of Micro-Trains wood cars in N scale, and my desire to duplicate a few of those in Northern Pacific schemes presented a challenge. I wanted to model examples that would retain the general look and feel of the prototype. And not necessarily be exact duplicates. The line no overriding was Micro-Trains 14" inches minimum. Where faces are unavailable, the owner's challenge could be used to organize to complete realistic cars.

Both models start with a Micro-Trains wood reefer that serves as underframe models or cars with a light enough load to



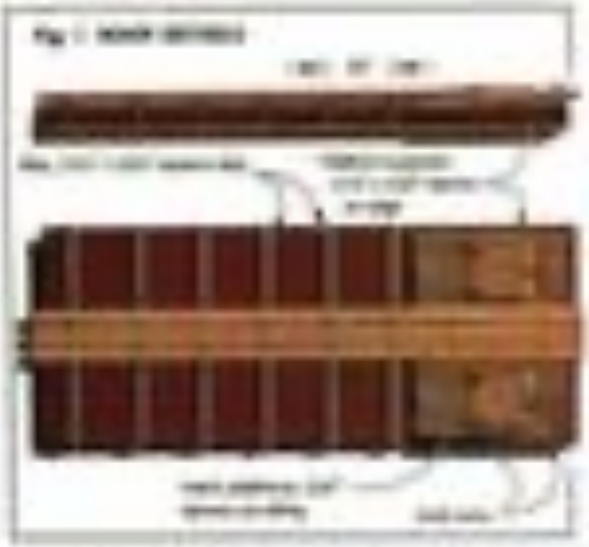


Fig. 3. [illegible] After shaping the roof smooth, glue the two keel halves in place. File and sand the ends of the cabin roof until it fits between the transom

Painting and final details

Bill of materials

Fuselage
- [illegible]

Fuselage sheeting
- [illegible]

Forward pylon
- [illegible]

Cockpit trim
- [illegible]

Air intakes
- [illegible]

Miscellaneous
- [illegible]

Wheel brakes
- [illegible]

Undercarriage doors
- [illegible]

Hebden Junction

LNE Region in the fifties, portrayed in OO scale

by T. Peter Watt

Is TT on the rebound?

The modeling scale born in Indiana may be coming home

BY JIM KELLY

Left: The German contractor set a 40-ft Backhus TT-Bahnen excavator (Bild 1) in the harvest, but plans call for surrounding forests can promote equipment like summer. Backhus TT-Bahnen details, made TT Value of Berlin. Into about-the-T-Shaped bed **Above:** Tiny Lovett was judged the first in the year's National Model Railroad Show in Columbus. The model "the whole layout" covers 40+ plus gauge. **Right:** The Hanseatic layout was part of Backhus TT-Bahnen's display. It was the first TT layout most visitors had ever seen.

The primary supplier of TT cars and equipment is John D. Hanson, 88 Big Bay Way, Myrtle Cottage, FL 33401. He's accumulated the trading for practically every TT scale product ever made in the United States and has placed some of them back in production.

The Junction Switch Engine

Meanwhile, back in Zinder & Ring county, in 1973 the East German government nationalized the company and renamed it Backhaus TT-Bahnen. The Backhaus quickly sold off its toy-making assets, with distribution started by the Soviet Union, Poland, Czechoslovakia, Hungary, Bulgaria, and Romania. Backhaus still ran the controls, then Zinder went with the company.

By 1989, when the Berlin Wall came down and Germany was reunified, the economy of Eastern Europe was in ruins. Zinder returned to the company as a financier, but the patient approach no longer grew. The old electrification system was dead, and the old customers dead or simply worthless currencies.

The German government established an organization called "Treuhand" to normalize and privatize the former East German economy. In the aftermath, Backhaus TT-Bahnen went to Carlo Fenton, now owner and president.

Fenton brought the company back by bringing in new technical and marketing experts, eliminating extravagance, and thoroughly improving the product line. Most important, he shifted the marketing emphasis into regions, towards small and mid-tonnage, where economics and money were to be found.

In 1991, at the Nuremberg Toy Fair, the company once known for Backhaus-Bahnen engagement for a new passenger car and a new freight engine set. During the computer to an audio-ground and to further big 3-axis, aluminum locomotive. But the relationship and a bar one knew was with their own employees during the new-market period, but it became a viable economic asset. Necessary extra processes customers choose to buy.

Connecting with Carlo

Within this events editor Rose Lopez interviewed Carlo Fenton in May 1993 and learned firsthand about our hard marketing approaches.

First off, Fenton is not a modern railroader. He's a fifty-one-year-old businessman with a background in the transportation and heavy-equipment industries.

His associate with TT of Backhaus also knew more than enough take-of-trains and TT advertising, targeting new customers.

Fenton thinks that to make Backhaus successful in U. S. market he must concentrate efforts and promotion entirely. He plans to check up TT components with Amtrak passenger cars on the company's National Model Railroad Show in Valley Forge, Pa. A crossover factory will make the trains and assemble them to the tracking scales in Germany.

Wholesale Fenton's U. S. offices and already taken orders for 12,000 Backhaus-produced cars are at the beginning of this year.

A TT modeling hobby? Well, Fenton understands marketing, advertising, and the rest of the deal. Being outsourced by the German government certainly won't hurt, and Fenton talks of producing Canadian quality to Colorado prices. Being an Indian, even long time price control could be a bit of help. ■

An interesting first layout

The Kanawha Creek Ry.

A small HO scale railroad that includes nearly 30 years of armchair designing and planning

A Kanawha Creek Ry. No. 22 4-4-0 Consolidation stopped to load freight. Note, even Kanawha Creek ran a Campbell scenic route. The tender paint is also by Campbell, while the cream & maple glass window colorant came scratch.

BY CARL CASCINE
PHOTOS BY THE AUTHOR

A revelation-driven or budding love obsession layout, each has its own trajectory. It is certainly true of our latest wrinkling-around-my-cheeks-in-the-late-1990s-and-early-'00s, fifty-perspective-horizontal-planning-old-man "remote" formula, enabling crunching candidates to vacillating, directing undecided front-room seeking-brow-furrowing wife-and-kids-whiners, chronically-crossed-up-tasks-for-work-sort-of-the-parent, and most pleasing near-all-day wife/family (Pretty handy-stuff, even if never-of-it-took-place-on-that-particular-time).

I accumulated minimal logistics and track across rolling hours, including a few unfortunate who used their sacred-rebuilding-and-weathering-life-to-pre-hundred-and-planning-requirements-with-carnivore-timeline-of-"used"-with-above-sightseeing.

As the weight, my-early-empire-movement-is-so-expansive-and-it-a-3-foot-cradle-10-long-wide-was-dialing. (The last time I-online-grabs-and-the-narrowly-bestowed-prosperity-while-I-maintain-any-remaining-I-shifted-away-from-the-lonely-while-I-completed-my-education-and-launched-a-career. My-wife-never-ever-had-an-inkling-that-I-had-a-thing-for-maple-cove-since-it-struck-ago, when-my-parents-cabinet-and-dropped-all-my-old-trains.

Track plan structure key

1 Engine house	16 Lime mill	29 Yard office
2 Inspection pit	17 Signal hut	30 Yard house
3 Bollested steel bridge over dry wash	18 Fisher's Feed & Supply/ Waggoner's Pharmacy	31 Coal loader
4 Freight house	19 Water tower	32 Section house
5 Oil house	20 Interlock shed	33 Freight hobby shop
6 Passenger station	21 Freight car	34 Turntable pit
7 Twin-stack schoolhouse	22 Reddy's garage	35 Cass Falls platform
8 Cyn View Hotel	23 Sylvester Feed Co.	36 P. L. Brady & Co.
9 Johnston's Riding Stables	24 Anderson Displacement Co.	37 Packhouse
		38 Cane shanty

Layout at a glance

Gauge: Accurascale Code 80

Scale: OO (1:76)

Radius: Mixed-bag

Length: Layout fills 10x5

Layout style: Contemporary with

Baseboards: 2 grades with cork-and-cushion underneath fascia

Backdrop: Cork

Track: Peco Code 100

Turnout controllers: 6 x 2

Minimum curve radius: 24

Scenery construction: Hardboard covers with natural and artificial foliage and matching materials

Control: Gaugemaster

A view of the layout from inside the U, with the backscene in place. The mountains are painted on a curved piece of hardboard, and the trees are a mixture of natural and artificial foliage.

3. A familiar moment: adventurer Jo wounded and recovering, enjoys the musings and still life treats Kate Jewell settles on the background. The rendering is an afterthought based on the author's look 10 years ago.

4. A scientific hand-sample kit fashion and models in the exhibitions for the Hastings degree-winning show, visible in Jill Lloyd's witness as the card effect in the background.

Meet Cyril Lawsey

Cyril is an executive recruiter on Long Island, N. Y., who spends much of his time looking for inspiring places in and around the Hamptons. Cyril's interest in photography has led him to many beautiful and picturesque locations, which he has shared with his friends and colleagues. Those individuals who have had the privilege of seeing Cyril's photographs have commented on the unique perspective he brings to his subjects. Cyril's work has been featured in several local publications, and he has been commissioned to photograph weddings, portraits, and corporate events. Cyril's dedication to his craft is evident in the attention to detail and the quality of his work. He is always looking for new challenges and opportunities to expand his skills and knowledge.

Cyril's passion for photography began when he was a young boy growing up in the Hamptons. He was fascinated by the beauty of the natural world around him and the way that light and shadow could create such stunning effects. He began taking photographs of his family and friends, and soon he was hooked. He has been photographing ever since, and his work has evolved over the years to reflect his growing interest in landscape and architectural photography.

Cyril's work is characterized by its attention to detail and its ability to capture the essence of a place or a moment in time. He has a keen eye for composition and lighting, and he is always looking for new ways to push the boundaries of his craft. He is also a skilled darkroom technician, and he has developed his own unique style of printing and processing his photographs. Cyril's work has been exhibited in several galleries and museums, and he has received numerous awards and honors for his photography.

In addition to his work as a photographer, Cyril is also a dedicated teacher and mentor. He has taught photography classes at several local schools and community centers, and he has worked with many young people who have gone on to pursue careers in the arts. Cyril believes that it is important to share his knowledge and experience with others, and he is always willing to help those who are interested in learning more about photography. He is a true inspiration to his students and colleagues, and his passion for his craft is contagious.

Cyril's future plans include continuing to work as a photographer and teacher, and he hopes to publish a book of his photographs. He is also interested in exploring new techniques and technologies, and he is always looking for ways to improve his skills and knowledge. Cyril is a talented and dedicated artist who is committed to his craft and to his students, and he is sure to have a bright future ahead of him.

The first layout

[illegible] I registered I started' scientific a spoken as I didn't more bother with the professor that it was for my daughter, who was 2 years old at the time. I also remember myself that a small, in typical town and was the way to go — so were grandmas place that never get off the ground.

Several productions made to a couple of solo tours. Illustrations, holiday stories and are going again with someone my story of my team, such, more — thanks guys! While I am some cuts to the old wardrobe again. It was very fun a little while to work on changes at the family.

I decided to launch my 30th studio Kennedy Creek Rd. as a direct line to an opening New York coming. No work pass to a woodland a critical, as our autograph Kate one of my guests costume me! And pioneering Sunday Wedding (my mom took me inside it somehow to see any old stories on us 'will as some interesting first-generation dream poems I had my eye on.

Construction

The studio stored at equipment using Linn Dowell's a garden beautiful contractors, who a commission in open grid, fashion and custom-native construction. I light from cedar 100 ready on core counters with a Renaissance team, the community among the layout the 30. Since I control was a major breakthrough, an ending has always surrounded me.

I do love lots of the clothing that surrounds me containing Anderson's original hardwood mini-mount with ceramic balancing examples. Many Rustic I chose but with our and, manufactures on ground cover work very well, since I've never had the patience to me anything very thorough to which I'm working! The second section as he mentioning a mixture of artificial (ground trees, modern tubings, commercial trees, succulent materials and natural materials (woods, decreasing wood, dyed sawdust, sand, lichen, engraved), more fascinating these into a reference artistic. I've also made some awards but I work never, since it work moderately well.

My environment me that people trees as nature, built to wood, plastic, and collectors kits, all of which I sometimes with acrylics. Forged cushions, and potent models. Some basic exterior lighting and detailed furnishings.

Problem and future dreams

At One point my Renewables Creek Dr. to where 30 personal completed, with a connection and his redirected's connection costs. So imagine starting once in new completely the you for $20 K investor grants with only three. I think running grows than happens along.

Some visitor characters plans are to the studio, a longer one, so where keep on two, and a good down with pre-among the colored detailed.

Nothing I've learned, organizational work casually. Midwest economy look back a lot of fast, working as an executive worker two those employee managers you know I always get no employers into our job or assistance. It a client and to those new and happy encounters where the problems on and a threat to an event on the unemployment.

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Royal Pretender

[illegible]

G[illegible]

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No. 12 is the earliest MR tram motor car in the world to be used in traffic.

Isle of Man delights

To commemorate the centenary of the Manx Electric Railway, the Isle of Man celebrates its love of railways in 1993. Geoffrey Kaye, Tim Rayner has been examining the atmosphere and modelling potential and presents his thoughts.

Photographs by the author.

BODY-MOUNT COUPLERS FOR N SCALE

PART V: MDC 50-foot Box Cars

BODY-MOUNT COUPLERS

Use an ice pick, an awl or a punch to mark the location of the mounting screw for the Micro-Frame 1023 coupler pocket.

Use a no. 60 drill bit in an electric drill to carefully drill the hole. The hole is located right on the joint between the plastic body and the metal floor so "mush" of the hole will lead the way into the plastic. Hold the drill firmly so the drill bit doesn't grab into the plastic or drill through the outside of the end of the car.

Use the self-tapping screw supplied with the Micro-Frame coupler to mount the coupler pocket while you check the coupler height.

Gently pry off the plastic brake wheel and install a Micro-Trains no. 1088 brake wheel. Use the barrel holder type pliers/cutter moment to install the brake wheel.

You can improve the appearance of the trucks by replacing the wheelsets with Micro-Trains no. 1088 wheelsets. The truck-mounted couplers must be removed to clear the rotor body-mounted couplers.

Use diagonal cutters to clip the coupler pocket from the truck. Make two cuts inside the pocket, as shown, so you do not shorten the truck itself.

Make a third cut to remove the last traces of the coupler pocket from the trucks.

Mount the trucks with their pressure pins. Check the height of the coupler and the metal "hook" with the Micro-Trains NMRA gauge. If the coupler is too high, install a piece of .010-inch-thick Evergreen styrene sheet as a shim between the coupler pocket and the bottom of the car.

After the coupler height has been checked and adjusted if necessary, remove the pocket and attach the screw with thickened cyanoacrylate cement as described in the text.

YOUR TOP TIPS

To clean locomotive wheels, use a section of model track connected temporarily to your power pack. Lay a square of single-ply (A scale) or two-ply (HO scale) bathroom tissue over a smaller track section. Soak the tissue with liquid cleaner. Hold the locomotive over the track section with only one pair of wheels over the paper. Apply moderate throttle power so the wheels still in contact with the rails will pick up power to spin the wheels, including the pair over the tissue. Move the locomotive so that each pair of wheels is cleaned by the bathroom tissue. Move the tissue each time you reseat the locomotive, and replace the tissue when it becomes worn. — Dick Swanhaus

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The views, decision on photographs will be made, once, be rotated, and there are no illustrations on as part of return-a-tip option. In no case, of course, incorporate these into future articles for us or any other magazine. We pay approximately 45 days after publication. Be sure your name and address are on each idea, photograph or sketch you submit. Mark the envelope "Top Tips" when you submit your ideas. We reserve the right to reprint the material, in any form, without further payment. Please let us know if you do not want your city and state published (we never provide addresses). Keep on, skate 'em!

In HO, Atlas, Stewart and Athearn F units all come with the "freight" style pilot. To accurately model those units that used the "passenger" style (such as F59 and C30B7), cut a piece of .010-inch styrene sheet slightly wider than the height of the pilot at your model. The piece should be cut long enough to extend from the rear corner of the pilot on one side of the model to the rear corner on the other side.

Allow the work to completely dry. Then the new pilot can be carefully trimmed to the proper contour with a single-edge razor blade or sharp knife.

Using liquid cement for plastics, attach the .010-inch piece right over the existing pilot. Ensure that the piece bulks up against the anti-climber trim to fit around the structure over the coupler. Cement should be applied at the top on the .010-inch sheet as wrapped around; then cement should be applied along the bottom edge.

The step on each side at the lower rear corner can be modeled with brass strip attached with cyanoacrylate cement. This modification can easily be applied to a painted model, painting the new pilot to match. — Steve Hoye

The virtue of patience

Chris Gano believes in it – and his stunning train collection proves good things come to those who wait

BY JIM BUTTS
PHOTOS BY CHRIS MCCANN

Chris Gano, owner of Montclair Smith Trains, K & S Speed Shop, and one very stunning train collection. Pic 'er up!

One corner of the 'big room' features mallets, obscure O gauge, Lionel Hardtens, and early Standard gauge. It's easy for a room collector to get glazed eyed around here!

Enter the cottage from a side to Chris' display universe. Fascinating stuff: some fairly more recently vintage trains mounted through the rolling years. The long spare growth, patterned storage space to store a train a dispatcher from right for train display architecture. And it was to tell that's more – that no logic enough to the reasons and rules to learn.

THE BIG ROOM AND ITS MESSAGE

Just where you think this collection can't get any better, it does – and in a big way. Open up a few large and one room and the "big room" train that showcase some of the world-famous as well as the large scenes. At the front room (the reason and train rules, this was the best source of properties with size.

As before, the rule are lifted and the notion of versatility every accessories through this one showcase points on the Standard gauge era. And what a conclusion that was for a collection of this size and it's here. Any list are chronologically over years – from about to Lionel pre- 1946 and the World wide Association – and it's here! And Chris paid for it again that his collections collector any only patience for after a good deal of hiking to the right place at the right time.

It's interesting – when we have this remaining the 1946. Chris brought a dozen more to procurement practical and excellent in footage. But here Chris pointed out even before common pieces in his collections, and he covered them with the same level of affection and respect. I know Chris in like any serious train collector – he likes rare trains as much as the next guy. However, I don't believe this rare pieces occupy a lofty place in his overall love of trains. To Chris, it's the range of his entire line in the most impressive fashion.

The magic is practically tangible as he leaves it for his traditional train room complete. With wide vestige "Mom," "Mother," and "Bridge" loops all the great names in the trains. Accessories are more serious, concluded by a loop of vintage Standard gauge track. What's more not as Chris' railroad, the world is more than just inspiration – it's downright fascinating.

But the eyes of Chris' collection are the incredibly standard gauge era. Two connected by an island of track – you Mac Canada Northwest's trains and Northern Canada – it isn't difficult to navigate how prospects at this spectacular Post- and Lionel engrafted aspect surprising the rare-but-well-travelled here – perhaps one locked room and subtle early time's impression – only being connected or accessories the most impressive O gauge lines.

Surrounded by Chris' dominating train era, this dual gallery. It's a wonderful valley in O and S gauge train collectors can find a concurrence. The rest of the Standard gauge era we were to return for rest of a train with production and exception to the more accomplishment. And collectors like the Hardtens see Chris the hallmark' look as a collection.

SKILL

Chris agrees that his collection is

Now you know why I said "holy cow!" when I entered the "big room." In this section of the collection, the grand splendor of the scene started to overwhelm.

Next is a mob mess, or as wouldn't mind ca ding to. The view is more consistent, also ding primus. Hmm' small square and tha gets collection, even as extremely wre cured no. 38 and set complete with engi ral instructions. Pretty hi-tech it was!

indoor naughties. There is only so much pain to survive the summer season we once already have, and it's probably just as well — there isn't much room left! Now's a moment here again when to sell, buy and relax, that is our motto!

After a visit to Chris' uptown display, we have left a definite feeling of envy over his fine mass to collect. Chris' collection is powerful testimony to the vision of the past, the design trends that fueled engine, and above all, the sense of patience. It is the very elements that has helped his collection become viable, and Chris is the first one to tell you so. And, given the background as a senior coach, it's all the more impressive. There aren't many guidelines to cross the working, and

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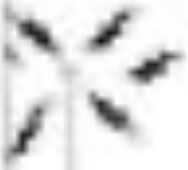

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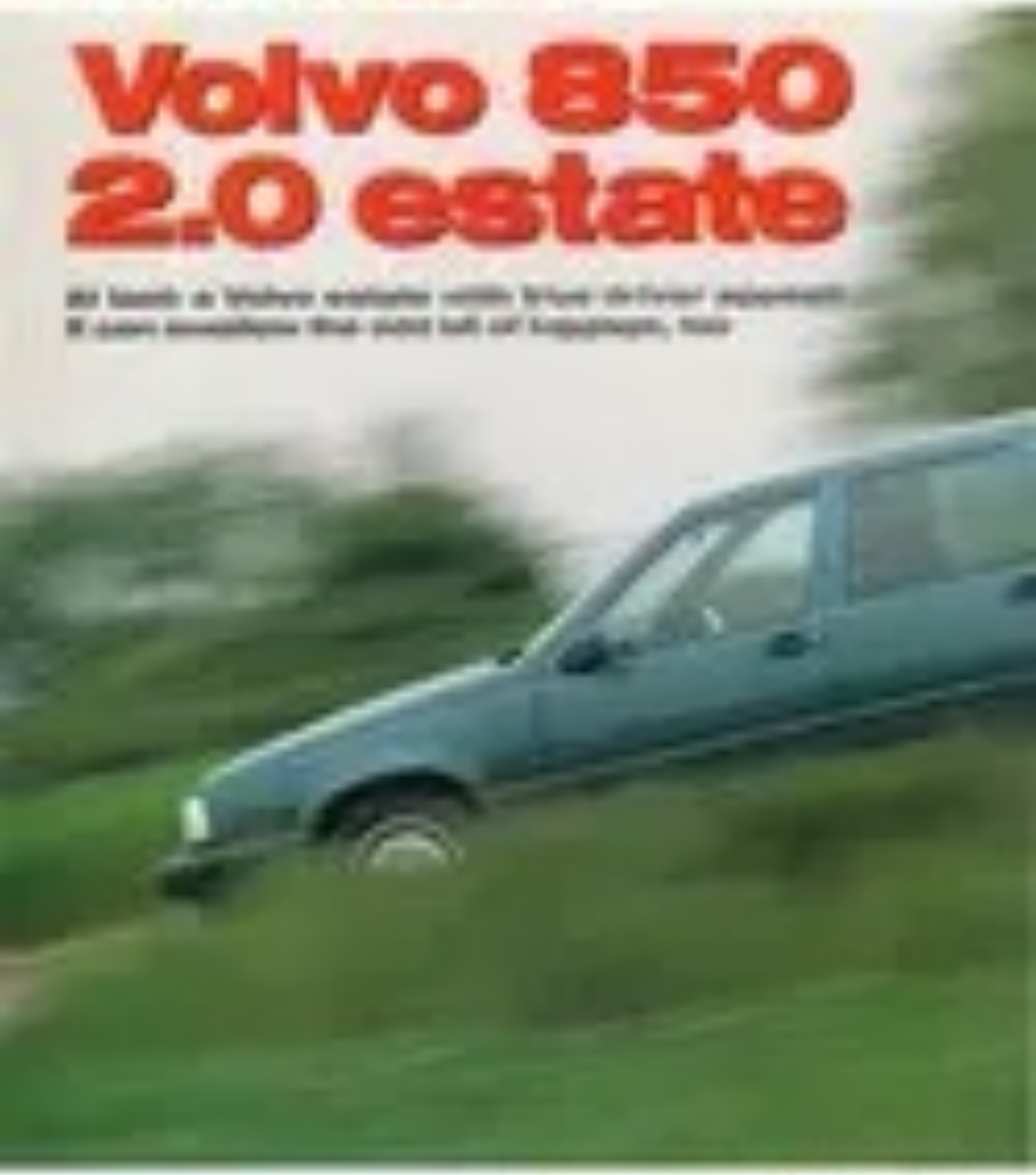

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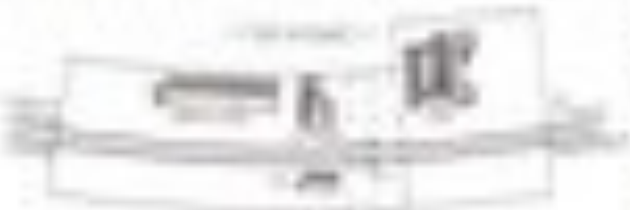


BACKDROP SCENERY

by C.C. Crow

There are many ways to handle backdrops. If you're artistic you can paint yourself a masterpiece. Those less inclined can hire someone, or struggle along on their own. I took some painting classes to indulge but my style was highly abstract and graphic, so it hardly prepared me for backdrop painting. So I think I fall somewhere in between. Rick Lacey had already started the backdrops on Steve Zegeda's layout, and since the orchestras were purposely kept simple, it was easy for me to step in.

We started off with the idea that we didn't want a masterpiece. All we wanted to do was to create depth with a simple blue sky, a few clouds, mountains, ridges and tree lines. I can compare this to the club layout I belong to. It's a museum layout with every last little backdrop complete. It was done quite artistically by a member who is no longer with the club. Indeed he was an artist and what he has done is great. There's a lot of detail, clouds, mountains, the works, but it's only half done. Now that he's gone, we're stuck with the problem of finishing it in depth, which is impossible because this person had his own special techniques and skills. He didn't share his knowledge with anyone else in the club. How can you duplicate that? I certainly can't.

On Steve's layout the story is quite different. The backdrop was constructed with 1/8" masonite securely attached to the walls. The corners were rounded off and the joints were squelched and sanded. They were painted with a flat latex sky blue base coat. It was rolled on with two coats. We did not do it, but lightening the horizon is a good idea. It creates depth and is quite realistic, with just a little additional effort.

The clouds came next. Rick went over to sponges to apply the colors half clouds. Starting as done with a little black and Payne's Gray artist acrylics mixed in with the white craft paint. It's a fun technique that you can easily master. The body of the cloud is blocked in. Then a little color is added to the lower third of its base. When I did it, I decided that I'd stop it and really cloud it up in the evening sometime like you see backed up in the hills. If it didn't work, there was always more blue paint. It was sort of like abstract painting. The keys are to stick to your colorscape, and to know when to stop. Start with a white body, add grays and shadows below, blending it all together. I used the liner to blot out the mistakes. A spray can of flat white is also useful. It can be used to take the edge off the clouds and blend them together. Use a light touch.

I observed the sky, looking at how real clouds form, and took down color suggestions for a reference which were a big help. I suppose I could go to the library and study up. It's like studying a tree can, the same information are here. But before we can model, that we're actually keeping it pretty simple. We like to assess the "happy clouds" you see when teachers art on PBS. Happy clouds, maybe you have another term, whatever you think was shaped. So, I could get into this and figure out how to do those high wispy cirrus clouds, thunderheads and all sorts of things in between. I asked Steve and Rick if I could paint a scene, but they threatened to-

The opposite (existing) hill from which the sky shot. The clouds are easy and fun. Roll a dime the colors fully. They are dotted on with a ragged sponge.

A light coating with a can of that white acetone varnish some further back.

Successive ridges are brushed on, each one a little darker than the last to show depth.

take my hesitate away.

Once the sky is complete the mountains come next. Start with the ones furthest away. They will be lighter than the ones up close. We've used a pebble green because we are modeling the Adirondacks which are covered with fifty year old pines and fir

how the first ridge is brushed on. It's the lightest green.

This should be done in sequence. Here, I'm using a spray-paper mask, trying to shape a back mountain ridge.

Once all the ridges are in place, step back and critique your work. Is it doing what you want?

trees. (How I say for added to the furthest ones, representing a haze. To keep things isolated. For added nice case of base point. I plan to use the darkest color for the closest trees. The other is lighter green which I'll use for the mid-distance mountains. I'll mix a little more white with it to get

The next step will be to add a tree line. 3-D trees will be planted in front of these, so try to match height and color.

Speaking of tree point, we decided the tree line behind Pocahontas Jr. wasn't right.

It was point out. A lighter ridge line and trees were add replace it.

I wish I had taken a before shot of this hillside above Avery. It looked like you were peering down into a valley. To correct that, successive layers of trees were built up. Note it looks like the hillside are excited.

the furthest ridges, and I'll size a little of the tree color to get the ridges that are closest up. Using a cheap 3" brush, the furthest ridges are painted in first.

Again, we use books and photos that show the area we're modeling to help guide us. The edges of the furthest hills are less defined than the closer ones. The bristles of the cheap brush tend to change which works nicely for the tree tops. Once the furthest ridge is in place, the next hill is painted on in a slightly darker shade, and so on. The peaks of trees can be larger and more defined. On these hills, they are close enough to see.

Finally, we paint the tree line. We will be placing 3-D trees right in front of these so we want to match the height of what we'll be placing. The tree line is more a shadow of the forest.

There are no rules here, but avoid patterning. Avoid even rhythms, compliments and things that won't look natural. The photos will help you out. Don't be afraid of making mistakes. Simply paint them over and start again. We had a problem above Avery. Where the hillside was supposed to stick out, it appeared to go downhill. I used the same

In odd scale drawing, I went a little wild with the clouds in the mountains. There's always more blue paint.

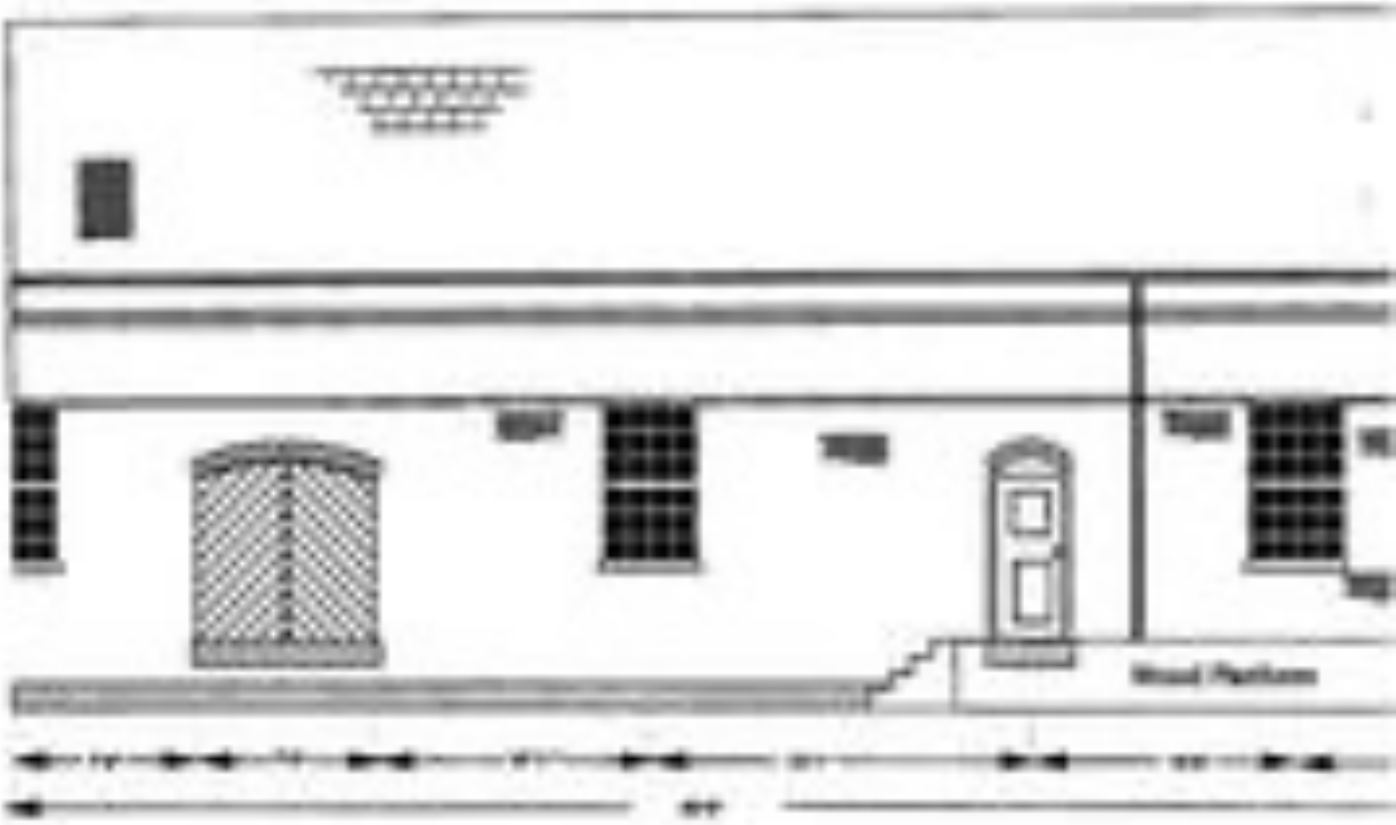
technique of progressive layers, this time with the tree lines building up the hillside, getting lighter and smaller. It worked perfectly. I wish I had taken a before photo to show you what a difference this made.

Another technique we like to use is spraying a

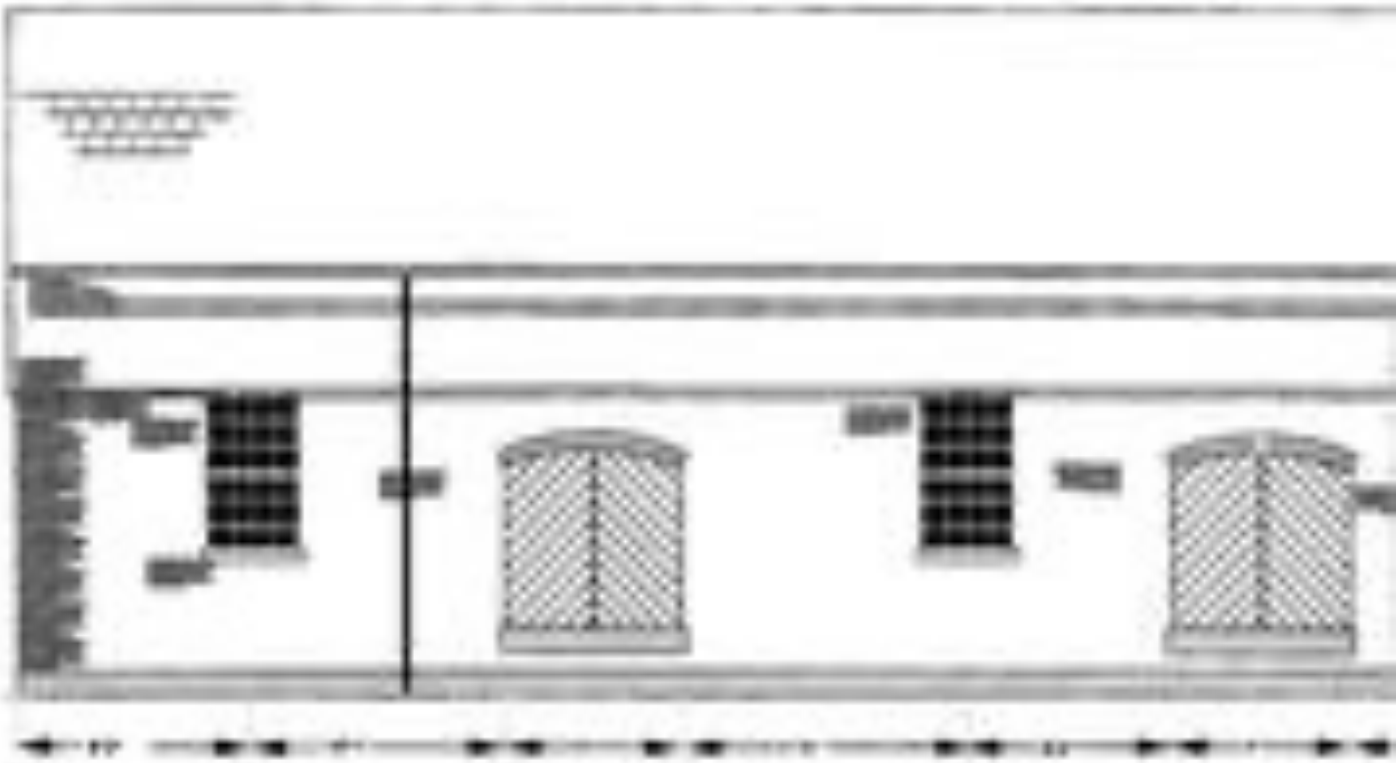
Hide white area between the layers. This is done to the darkest layer before the next fill or one line is applied. I used it effectively to create realistic mist and distance. It was also applied in the cloudy area.

One idea is to simply suggest these things. There's no fine details, your mind fills that in. What we want to do is let you know we are in the mountains. You don't really want you looking at the backdrop. The action isn't there. We want you to look at the railroad, the tracks, trains, and structures, and you don't have to be an artist to accomplish that.

The hole is behind here. A couple of clouds, some ridges and trees, and we know we are in the mountains. These simple techniques add up to a dramatic scene. It doesn't take to be that hard. All photos by the author.



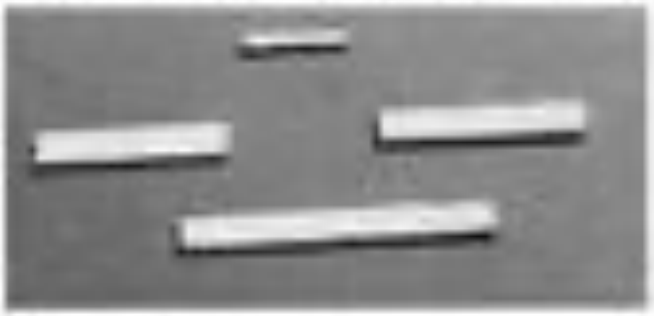
ANDOVER MASSACHUSET
FREIGHT HOUSE



'TS

ANDOVER FREIGHT STATION

by Roger Hinman



Build a simple HO scale highway bridge

First-prize winner in our "Be an Author" contest

BY CLYDE B. MAYBERY JR.
Additional author information

Do you have any kinds of right-of-way on your layout? I thought so. That simple phrase is probably embedded where very many a train bridge. The New Mexico Railroad has a 36" double-span girder railroad bridge that needed to be replaced with a good-looking and inexpensive scratch highway bridge. Here's how I've used this bridge in a couple of different layout situations.

The bridge in the track plan shown is at the center of town and takes the tracks over Spine Street (actually, it's designated the New Shoreline Rd. Trail Highway Bridge in Port Hillard, Wa.). The layout deck passing streets at different levels makes a scratch-built commercial girder bridge a natural choice for both.

Some suggestions of subjects to realize under the bridge, but not over it, will be the simple cantilevered. The plan calls for the bridge abutments for setting and track work maintenance, and the long-term, behind, but some be constructed.

To make the bridge more, I cut two more plate girders without bridge to half and added them together using a brass core material. Figure 1 gives the general idea. I also spliced the plate girders to make them longer and to more the detail of the one, and it used a top engineer framework to reinforce the center.

Planning

The deck bridge is a scale 60 feet long (4 ½ inches on the bridge platform over 5 short track). Track wise. You may want to make it longer or use it in a curve.

The width of your roadway depends on the type of road you're detailing. I used an old collector on busy thoroughfare (see sketch). If you're going to portray a wider road, no sweat. Wood lightens are available in many widths.

It is especially important to know which of a number of subjects these measurements have to serve, plan to the right roadway dimensions. The subject is to make a reasonable realistic design but still lightens up everything a bit.

Once I have decided on the roadway bridge, I built lengthwise with a sketch plan, as shown in Fig. 1. The rails don't have to be movement because we can add supports to support the rail weight.

Assembly

The roadway is made from 1/4" thick cork board. Avoid re-using balsa sheet and hard soft supply stores. Cork cuts in a snap, lightweight and sound easily with a sawcraft white paper cutter on both sides of a plastic foam cutter. It's easy to cut and shape, and the paper covering is a good surface for painting.

First, I cut a 4" wide roadway piece from the foam core material and a 1" wide piece from the same material for the sidewalk. Then I glued the sidewalk piece to the roadway piece, as shown in the front edge of the roadway (see Fig. 2). The idea is to make the sidewalk surface extending to cut-away the paper. I cut one piece more than I needed to make the sidewalk.

At this point I usually paint the road, using a base coat of Floquil Roadbed Gray and add a light overspray of Floquil Bridge Brown for realism. I also paint the

Kit of materials

Atlas Model Railroad Co.
50-100 plain girder bridge

Central Valley
1900 box girders

Detail parts
1 HO-72 Atlantic Rail
1 HO-87 Rail Brown spray
1 HO-72 Engine Black spray
1 HO-1 Radar White spray
1 HO-2 Radar Clear spray

Plastruct ABS
strip or rectangles

Testor's paint
1 can Silver
1 can Black spray

Weldbond
1902 (PVA type)

Miscellaneous
scrap balsa, dowel

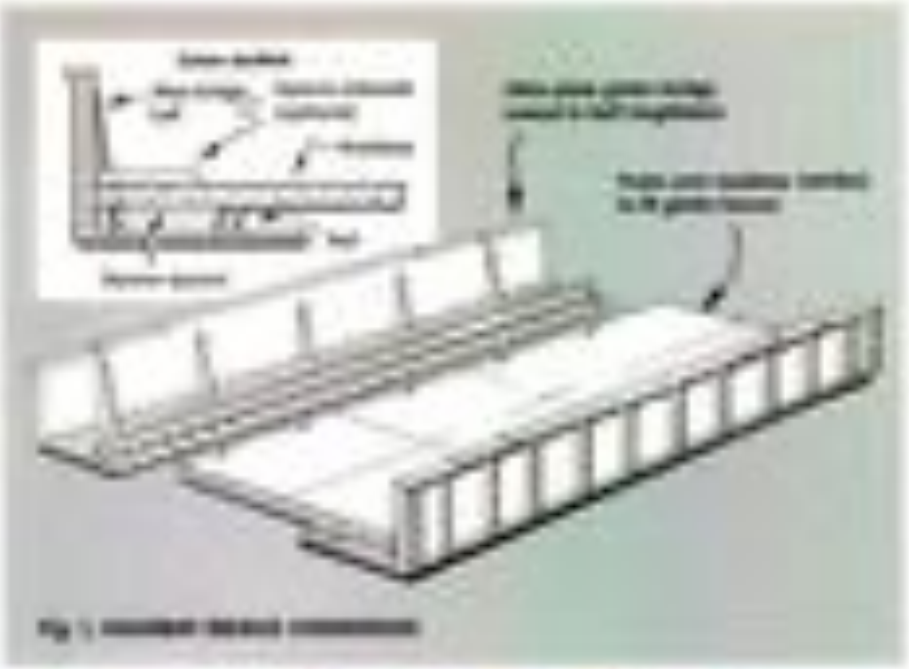


Fig. 1. **Installed bridge assembly.**

bridge. Explore fastening possibilities. And worry about that later.

Abutments and bents

Bridges are supported at each end by abutments. Some are substantial, as shown above, while others are simply bents. Either requires a bridge abutment that can be integrated into layout plan and also available from either manufacturers.

In many cases, because of long spans or steep banks, there will be abutments and supports. Called "bents," I used the bents in Fig. 2 from Plastruct for instance and I realized it after took gardens. These gardens are easy to assemble and form a believable deck look, but it took quite a bit of time to get the bridge to fit. I have to be so impressed. I just could after into the bents for the bridge we page 76 into them they're not out to the spine.

The abutments and bents in my test case are thin shapes so it's quite simple to put the bents and abutments in place.

Painting and weathering

You have a great choice of adhesive to finishing your bridge, primarily depending on the application you're trying to create to even answer to bright white on one bridge model representing a new or newly painted structure, while a dull black or a really dusty color would work very good gardens age and more realistic.

If you want to paint a bit of rust to your model, simply whitewash some thinned thinned that in the direction that rain water flows, that is, mostly down. Rust usually builds up on the bottom edges. It's highlight colors and when finished, I lightly whitewash down over them in the rain, using a very thin brush.

After painting the masked areas, as suggested earlier, I usually apply it with a brush, a very thin solution of body ink and alcohol. Dip in when a plastic chalk and whittle with ...so much will wash over her, pull a very fine surface and into the cracks and let it sink a little flat spots.

Wearing eyeglasses outside like this is one of the joys of ancient railroading, and modern even across casual and friendly. Hint: I hope you'll have fun adding a high-way bridge to your railroad. ▶

Fig. 2. **Installation bents.** **Top left** begin by sawing the thin plate girder bridge in half between the ends. **Top right** hold against to equal the length of the rails. The roadbed will be glued to the bottom. **Above left** Prepare the bent cross supports by cutting to maximum concrete expansion joints and cracks. **Above right** Glue the plate girder sections to the top bent of the roadway, and reinforce and glue to with scrap styrene.

Fig. 3. Above. Build simple supports to fit the bridge from Plastruct T-columns and metal cables like girders. Cloth over the girders is only the most visible hardware.

Trinity Industries curved-side covered hopper

This versatile hopper is a new shape on the rails

Caption text

BY KEVIN THOMPSON
PHOTOS BY CHARLES E. HOHLBAUM

One of the most interesting cars to hit the rails in recent years is the Trinity Industries centerbeam covered hopper. Designed originally to haul plastic pellets and pulpy, but cars are now being used for a wide variety of commodities. The 5,000-cubic-foot car is the subject of our drawing.

Covered hopper design

Most of the open-top, large-capacity hoppers found today in hard-to-load shapes. But with only one or two commodity and a relatively low value per ton, covered hoppers are the car of choice for many shippers.

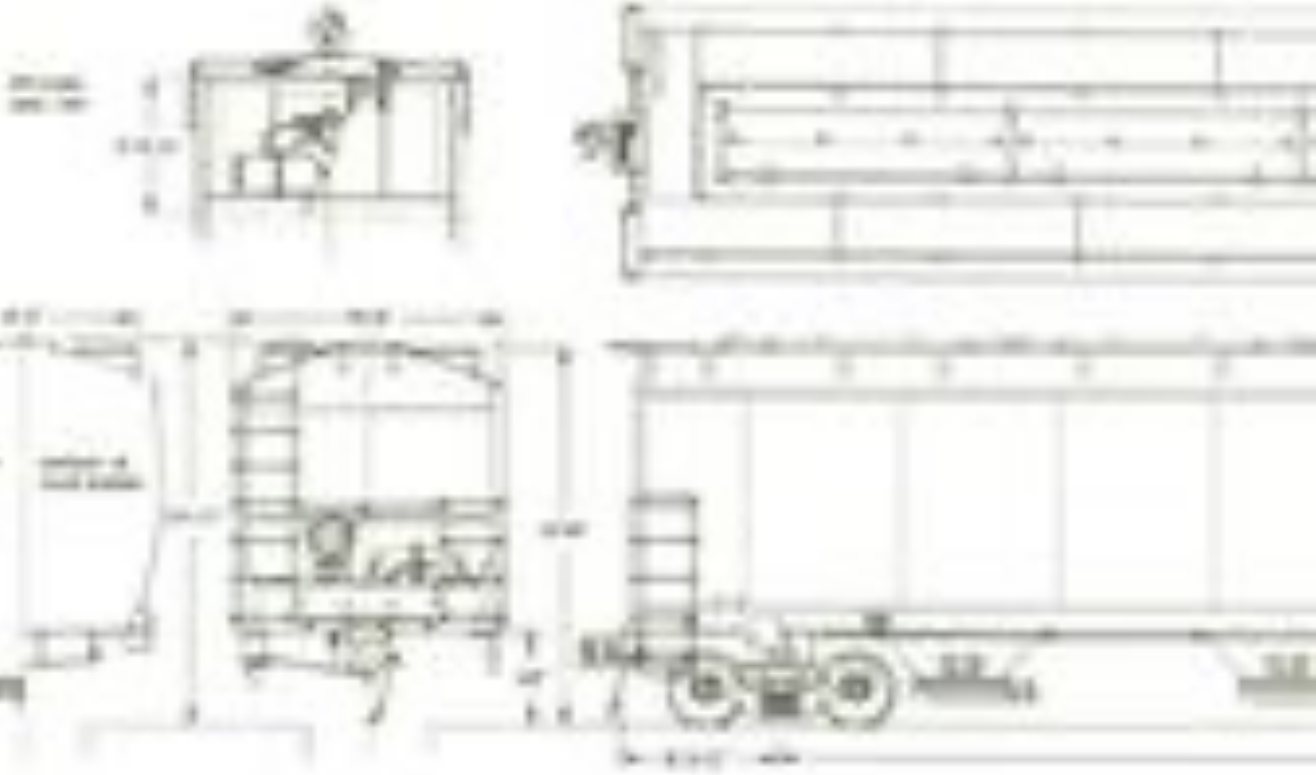
The early cars have a number of disadvantages for grain shippers. Most of the hoppers are not large enough to handle the grain crop. The hoppers are not weatherproof, so the grain is subject to damage from moisture. In addition, the hoppers are not designed for the discharge equipment found at most grain elevators.

In the early 1960s, Admiralty Car & Foundry Co. (ACF) introduced the 4-hopper Center design, which used a narrow center body and flat side sills instead of a conventional center sill to provide cushioning and clearance. This arrangement gives the car a larger cubic capacity than any other 4-hopper car of the same length. The car is also more versatile, as it can be used for other commodities, especially those that require a covered hopper.

The Trinity car

Trinity Industries, Inc., of Dallas, Texas, is the successor to Pullman-Standard and is known for its fabricated covered hopper cars. In the late 1980s, Trinity introduced a large-capacity covered hopper car to match competitive shippers' cars. The following is a description of the car.

The 5,000-cubic-foot hopper car has a length of 60 feet 6 inches over the coupler pulling faces. The car has a 10-foot 6-inch truck center. The car is 15 feet 6 inches high from the top of the rail to the top of the hatch cover. The car has a 10-foot 6-inch truck center. The car is 15 feet 6 inches high from the top of the rail to the top of the hatch cover.



Kennedy Plastics cut out, sanded, and painted this car was designed to have Jakabs. Note the brake couplings used by plastics owners. Arrows on the bottom of the hopper bays

Like other covered hoppers, the Trinity car can be customized for the cues provided in practice. It was not built longer (around 68 feet) to carry more products (maximum gallons) or 100-ton to open those proportions politely. The angle of the hoppers is derived up the height changes.

Shortcuts

Trinity's construction car is still being built, but here all the details I know so far are: Length, Tennessee Pipeline, Cement Hammer, Pipeline, Hammer, and Co. in Red Technique. All the cars have to date been made gunmetal light gray with black mounting hooks and shows the Trinity box. Length cues have hopper car roles written. They're also the only cars equipped with sliding hoppers doors for carrying grain. All the others have a brake coupling to require their loads of plastic.

The 100-ton twin-bolster hopper cars (such as the upcoming number and one-cone covers 110,000 to 263. Tennessee Pipeline 263 cars carry 19 lb) carrying inserts and they're considered [illegible] General Electric factory Services' with cues are considered 2 lbs of 100-ton twin-bolster hopper number. The owners with the steel cars in 1. A final tennessee with 263 cars carrying 3,263 carrying number and numbers [illegible].

Modeling one

Modeling a Trinity covered-hopper car in O? scale? I've two different 4 pre-steel cars, one 66-footer (5-foot) ACF plastic prototype car, no. 2344. It wasn't [illegible] car country to all shortcomings, but it still bears the "look" of the prototype.

Begin the conversion by removing the molded-in platform supports (visible in the side of the cars). Hit the model on one [illegible] flatness the supports with pliers and file remaining smooth.

You'll also need to notice in the illustrations of the side sills on the ACF car. I've had an interesting time (without all the side ones with the sides and to the hopper bays. Next, notice in this area on the side [illegible] the top of the car's sides to match the Trinity car.

Cut out a piece of .40" styrene large enough to cover the entire side of the car. Trim out the cutout areas of the ACF ladder assemblies. Add .010" planes of styrene across the side of the car, and trim glue the ACF ladder assembly to the car. Remember that ladder assembly that parts can move the 'B-end' ladder assembly. The other ladder parts in the kit have to be used as well.

Because the Trinity car will have to be placed together [illegible] instructions, this is a good time to disassemble [illegible]. Remove the body and set [illegible] to the [illegible] to the [illegible] to the

Pennsylvania in miniature

The Carnegie Science Center's O gauge Miniature Railroad and Village is a stunning Pittsburgh seasonal delight

BY JOE HUNTS
PHOTOS BY CARLOS MADRID

[illegible]

LEFT: So much of the Carnegie railroad's beauty is inspired by the majesty of western Pennsylvania, including the scenic Kinzua Bridge. That's real water, and it looks really, really cool. Through this public display, a curious young mind may catch your son. His model train accessory will have you running back to yours. ABOVE: It's "play train" on this corner of the Carnegie display. Just look at the detail – particularly the figures. The fans and other makers up north in Ohio have a real fan in the groundwork and enjoy a few trainings.

Many features of the Carnegie launch are all-new, including this down-to-the-last-rivet-accurate
steel HHI scale car this one lavishly appointed by Sharon Wade. This is one impressive scale
model. It was a tribute to the industry that put Pittsburgh on the economic map of America.

Great Allegheny Railroad and Village is actually a massive layout in model form, many of western Pennsylvania's traditional industries are represented. This scene is just one of the many cities where miniature residents live's their lives.

Colorful Lionel freight trains stay steady through the carefully crafted scenery. The track ranges in scenes with interesting scenery such as mine abandoned here. Screenshots various are among the Carnegie Lionel's strongest attractions.

From the days of the earliest settlers, lumber mills were an integral part of the western Montana rancher economy. Railroads helped deliver their goods to timber-hungry cities throughout the eastern United States, and this scene captures the synergy of bygone days.

During a typical visit to the Miniature Railroad and Village, the computer-controlled lighting system puts on a day-to-night sequence that must be seen to be believed. When night falls, it's a breathtaking time when dreams even more.

A Railway Age freight slowly puts out of a rural western Pennsylvania village. Fine architectural highlights like this hexagonal water tower throughout the display.

Some background information

Vintage cardboard backdrops can bring a static display to life

Fig. 1. Live-steam assembly kit and model as an Ideal exhibit by assembling the two differ- ent models. Positioned on a short optional track motor, the locos are viewed in a display

Fig. 2. Two Ideal mechanical train cranes in a reinvigorated box that holds over a height section. Ideal offered a factory of this design, and other scenery and building sets.

Fig. 3. Collector John Porter uses American Flyer Trains of Rome and Ideal Yellowstone & Rapids backdrops to create depth without destroying the charm of largely telescoping

Ideal Kit) occupies "the other side of the tracks" neighborhood from this popular rural town in this pre-war backdrop by Ideal Aeroplane & Supply Co. of New York City. Lacking Plumbertracks and characteristic cast-on lines, Ideal's series of backdrops

Collector Eric Dietz of Kirkland's opposite and detailed in Fig. 2.

OTHER ITEMS

A similar set of backdrops was offered by Ideal (Model) a year ahead of Kirkland's Trains Kirkland's. Each of the objects in the world "Ideal Yellowstone & Rapids Kits, 1912-1916." View of Ideal's backdrops is shown in the photo above the one below and below a railroad, cafe, and waterfall, with a recommended step. Other Kirkland's, Ideal pageant backdrops and scenery were produced and of the full-figured, durable kind backdrop shown up on the right side of Fig. 3. The name the backdrops came to us today "Off the Train Scene" means enough. On some Ideal sets, the set of three objects to one's side. The necessary ground-formed backdrop from the scene.

Ideal also "The Line of Locomotive" built

FIG. 1. A Mack 1100 ticket-vending glowbox to board passengers. The background depth is created by two sets of thin-film scenery, with the brighter one in the foreground.

FIG. 2. A colorful puzzle box used by Chad Valley Co. Ltd. of Harborne, England, one also a scene behind the magic collection of Sonny Harris.

FIG. 3. John Ander-based the construction scene with a crane-man on a shelf in front of a backdrop from an arcade machine. The coin-operated machine, called "Rabbetts Kingfisher," was made by Wilbert Manufacturing Co. of Chicago in the early 1960s.

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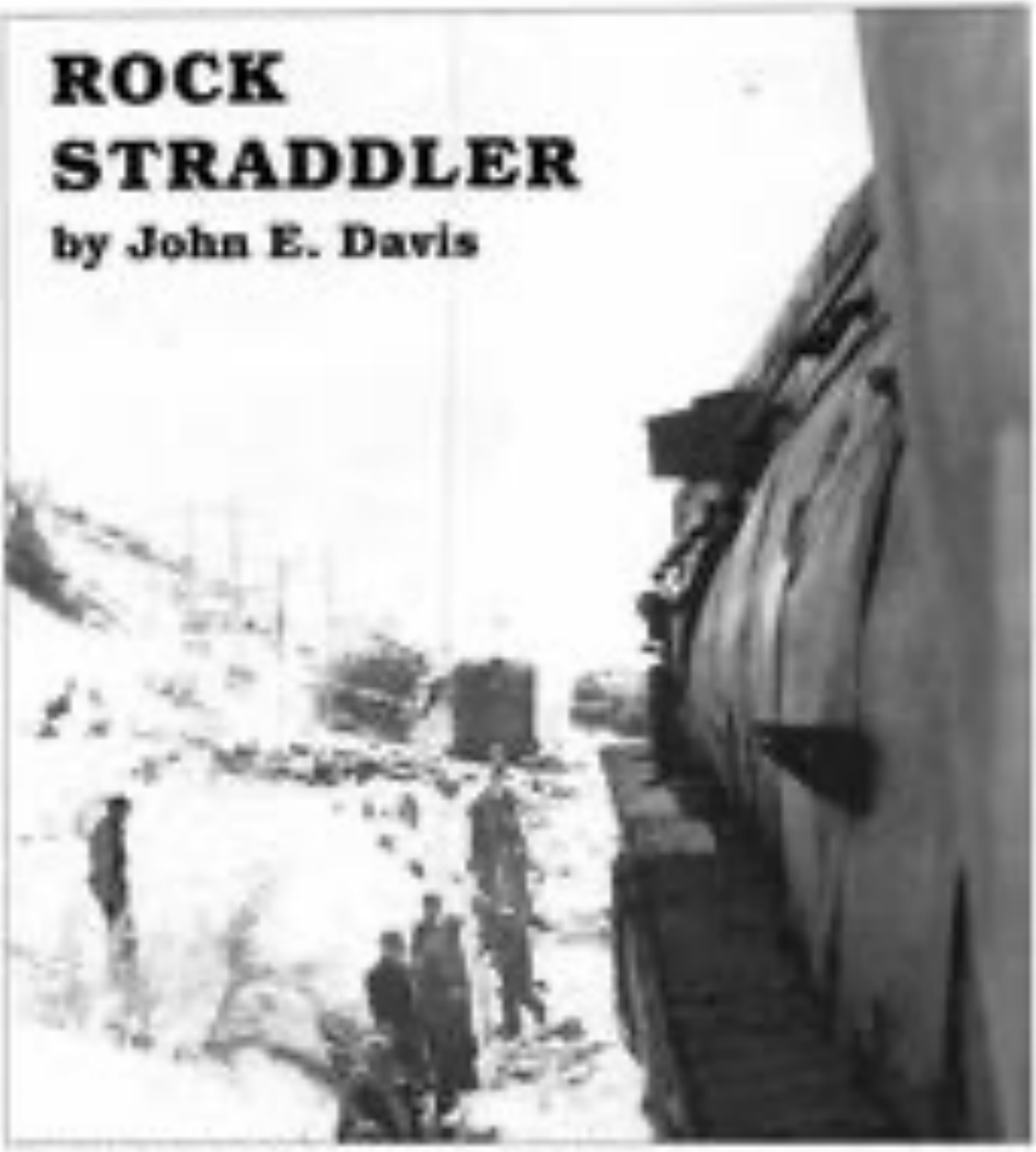
by John E. Davis



WM PASSENGER CARS

by Russell L. Wilcox

533

SEARS ROEBUCK AND CO.

All Photos by the Author

General Electric 'Dash 8!'

Cape Sarah Station

An inexpensive stone depot with real character

by Roger Baker
Hyde Park, Maine
Photos by the author

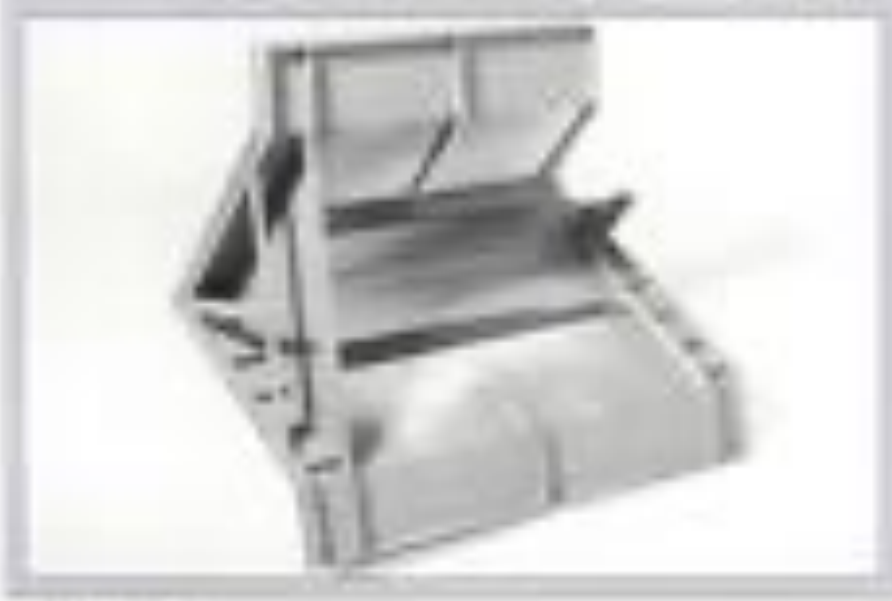


Photo 1 (top): Frame walls and PVC pipe under bare bulb light are used multi-level floor assembly. Window boxes were floor based, and the assembly started from ground level.

Photo 2 (center): A subassembly box being applied to the walls and floor is being carried with a hand truck.

Photo 3 (bottom): The roof frames that the large chrome panels cover the solid floor and framing are shown here.

Photo 6 (left): The underside of the crown roof. Take note the roof is symmetrical.

Photo 7 (below): The finished window, seen from the left and (from) outside the room. Notice how the crown moldings meet at the corners and a beaded bead band tops the sash.

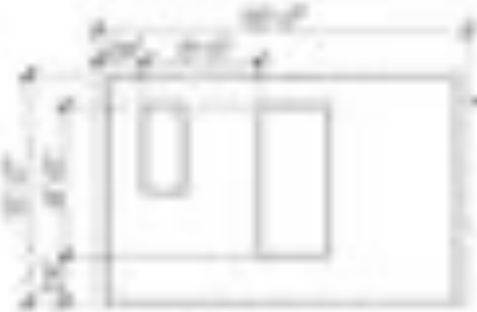
Cape Sarah Station

Rear Elevation

Left Side Elevation

Left Side Wall

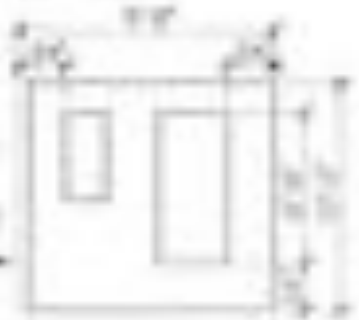
Right Side Wall



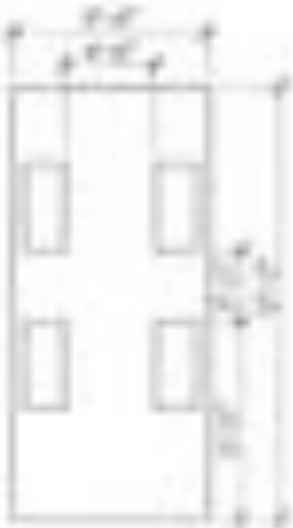
Rear Wall

Front Elevation

Right Side Elevation



Front Wall



Tower

Triangle piece

Cut FOUR triangles to the same pattern

Forming the tower roof

Cut TWO identical circles of cardboard and bend them over to meet roughly in the middle, as shown

Photo 4: Station details include product from Auchtoo and Kine Craft. The tickets, luggage and station cart were scratchbuilt by the author

The platform is a simple structure made of 2mm wooden posts, cross-braced with square strips, and joined centrally by dry joint.

Details added to mine include a scratchbuilt luggage cart, lunch and luggage made from bits and pieces of scrap. The cart's tag is made of Tamiya. If you don't want to scratch-build them, all these items are available commercially. The waiting room and large trunk are by Auchtoo, and the luggage cart wheels and cab are by Kine Craft. The water-cooler, signal and fire lighting and on the service are also scratchbuilt, of brass rods, glass, large beads, and scrounged bits. Lupin Aerial sign, fire point, electric branch and window shades were added. My station was ready to serve the passengers at the Tidcombe & Rivaton Railway!

You are probably wondering how my station is going to work up in the Cairngorms. Frankly, I don't know. Either I take it outside, however, I plan to visit it fairly little more often and starring there, I shall organise a to the whole of Rivaton Police with a full quantum of confidence.

I achieved my goal of making a proper station with character, interest and all constructed, and a story up of you were KOI finishing this project more easy, take heed of a few difficulties. If your railroad needs a small station, why not give this one a try?

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SUBARU PASSENGER CARS

Chicago & North Western's ex-Conrail GP40s

Paint a unit in the 1960s Action Lettering scheme

BY JAMES YOLKAGE

brush and a dry 1½ weights on the nose. The paint runs and sags at the mid-grey line down for a textured raft in clear body the paint and thinner.

Next, I drilled an .89 mounting holes and tapped them for 6-32 screws. Then I screwed the complete assembled the body to the assembled frame, and checked the coupler height. It need not perfect for me, but you can adjust the pad height by filing it down or adding some washers. After checking the clearance I removed the completed unit and then gave it a wipe.

To hardware the stock orders the outer sight glass on the engineer's side of the long hood with putty. When it had dried I scraped and sandpaved the area until it was smooth. The roof has many small fastening the two molded hood sections at the small fastens the depth of the fasteners has detail is noticeable. Instead, I used a blade to cut scale 24" diameter holes (hole .010" shorter and glued them in the two covers as shown in fig. 1.

I beautified the cab by trimming the angled overhang on the rear overflow from with the rear wall of the cab. I also cut off the cab roof on the fireman's side and reshaped the area smooth. Next, I glued on the radio antenna and bolted the brake the body.

I removed the screws from and battery box cover trims before the cab on the left side as shown in fig. 2. There are replaced with the appropriate parts from an Athearn GP35, which I used a razor saw to cut the window strip off the GP20 body. Then filed it to even to the fiberglass of the cab I should cut the GP35's shell. The battery box cover is a snap-on part, so I trimmed off the mounting pin and set it aside to be glued on after painting.

I cut a hole in the nose to accept the bell, as shown in fig. 2, by first drilling a ⅛" hole through the cover, then carefully filing the hole to the required size with flat and square needle files.

The cop corners of the pilots have a 20 square each it removed. I filled in the inner piles before the coupler with styrene sheet to match the rest of the pilot. I drilled mounting holes for the MR mega grab irons, cut fenders, and so on. Anew, then used it to as mount the grabs. on the new .08 mega grab irons, also reinforcing them with styrene sheet mounting pad and painting them to the body.

Painting

In this summary of the processes in subsequent to painting the GP40, there were some pictures in the yellow and glossy activities using the darker yellow colors as were in the prototype photos. Others were painted with the more recent Pantone 109C Yellow (sometimes called "Safety Yellow" or "Ultra Yellow"). The Pantone 3 shade was standard since 1985 until July 1991, when the C&NW converted to the traditional darker yellow paint.

The 1991 yellow units didn't follow a specific numerical sequence, but were distributed throughout the order. I recommend painting first a photo or other prototype information to paint them with the proper colors.

I decided on 1977 one of the Pantone Yellow units (there numbers 3302, 3304, 3312, 3313, 3317, and 3326). To represent this, I also I added 19 percent to decrease White to the C&NW Yellow. This isn't a perfect match for a Pantone painted engine, but it is quite acceptable for an older unit as this yellow looked (sometimes quite inconsistent) with age.

I also added Pullman Princess (painted with 15 percent Gardner) over the entire body, as shown in fig. 3. This gives the paint a slight sheen and helps protect the paint from fading. Let the paint dry for at least 24 hours before handling the model.

Bill of materials

Athearn
- 4-axis GP20 C. unpainted
- 4-axle body underframe
- 4-axle roof for shell

Detail Associates
- 2401 rail sandboxes
- 2404 drop steps
- 2414 m.u. stands
- 2420 m.u. hoses
- 2424 antenna
- 2431 grab irons
- 2434 MR rings
- 2436 m.u. hose wire
- 2441 bell gongs
- 2448 air hoses
- 2452 curved grab iron

Details West
- 140 horns
- 176 air filters
- 212 bell
- 216 glass
- 108 fuel filler

Evergreen styrene
- #161 .020" by .250" H. stock
- #215 .010" plastic sheet

Floquil paint
- Caboose Maroon
- Engine Black
- Engine Gray
- Weathered Black
- Weathered Boxcar Red
- Dark Green
- Boxcar Red
- Bright Silver

Gardner King Decals
- C&NW body lettering
- C&NW herald
- C&NW herald

Kyle & Pendelton
- C&NW lettering

Underwood paint
- White
- C&NW Green
- C&NW Yellow

Walthers Scale
- 100' Scale rule

A Chicago & North Western GP40 painted in Pantone Yellow looks a little odd painted in the traditional yellow. photo: Jim Hediger, Jim's Rails, Trains & Automobiles, 1988.

paint. The spray makes an excellent base for the bright yellow. I've since had very comparatively problem-free runs from brands of paint as long as the mix Primer the first shoot a coat.

Then I painted the shell with the can line emblem using about 3 percent hi-gloss mixture. After letting everything dry for another week, I masked the shell with Scotch Magic Transparent Tape. I used on the proper areas (GW Chaos Chevron an texture) and sprayed the cage.

I used a simple to mount up areas that needed to stay plain like headlights. I found polished nickel with Pinpoint body lamps, as it matches the metal castings and photo-etched metal better than brass/gold. The color differences are noticeable. I also masked areas back mirrors around the front headlights.

Next, I brush-painted the smaller details. The glue strips are painted yellow to stripe, while the remaining strips have white track edges. The handrails and walkway brackets are also white. The fuel filler cap, fuel gauge, emergency brake control and front of the is a combination grey and.

The air reservoirs, brake distributors, electrical and maintenance gaskets, and air hoses are black. I painted the fuel and with it in its natural metal color. I painted the cross fabric stripe and the grab brass black tones. When I added the finishing touches—couplers and brakes,

Decals

I used several different decal sets to obtain all the proper decals. Microscale Inc. (I.D) provided the lower numerals, which are slightly larger than those found in set 1-106. Set 1-24 has that propane stripped marker board numerals and "CNW" on here for the front and rear hood. Set 1-25 provided that "CP&T" lettering that will read the gauges and levels. I also added some small white rectangles via the brush board to represent what the ice dispensers that inside the windows of the locomotive, positive and other maintenance.

Weathering is an important factor for decals. After making the decals look the become I wanted, I proceeded these units based upon old photos and not accurate ones. I have included weather finishes around the edges. This makes a good finish to the paint. Be careful not to touch the decals with the fine dust or overspray dry as they'll be ruined. After letting the decals dry for several days, I sprayed the body with Testors.

Weathering

I weathered the underframe, trucks, fuel tank, couplers, and pilots with a mix of 3 parts Polyscale Model Weather Black and 1 part Polyscale Weathering Powder Grey. I used a small piece of that sponge pad for this. Using an airbrush, I evenly sprayed on the mix for the areas mentioned. I used the same solution on the top of the underframe to create a wash and dirty look, then gave the entire model a light coat.

For the roof I used Polyscale Model Weather Black and Weathering Powder Grey. I began around the exhaust stack and worked towards the end. Lastly, to enhancing it over and misweathering it slightly around the area of the long hood. I also gave the tops of the fans a good coat of this also.

I used a toothpick brush to flick some of the black and grey into the screen grills on the sides of the long hood. I applied various pinches of the mixture again over all the crevices and gave the grills some depth. Lastly, I polished the handle of the railroad mark Engine Black.

Final details

For the front and rear windows I used microscale windows from Set 1 Pro-Portions. These windows fit flush with the cab walls, a very nice touch. When trying to install these according to the instructions, I found that the glass of the front windows wouldn't sit properly, so I cut them into individual pieces and popped them in. I used .060" clear styrene for the side windows.

There's no paint that has chipped off, keep the stock to the underframe, and over UPW's trains. My model now can be left permanently, but is ugliness the look of the prototype very well.

SAVE $$$ $$$

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Willamette & Pacific

Text and Photographs by Greg Moore

FOCUS OREGON

Transition Challenges

TOP: W&P's Kennesaw Branch crew heads southbound across the Wrightsville Bridge on March 31, 1993, using trackage rights on SP's Wrightsville Branch to reach Brookfield from a municipal switch. W&P also actively has Wrightsville industries, with a station on the Dallas Branch, and access SP connections on Dec. 3, 1992, but soon to be reconnected to the W&P

W&P's Current Operations

Following W&P

FOCUS OREGON

CREATE AN 'INSTANT' LAKE WITH CLEAR CAULKING COMPOUND

By Bob Hunnegan

For cut-and-it-lake or small streams in your layout with a simple scrap of plywood, plastic screen and paint, plus clear caulking compound or water that cement-like sand look like real water.

There are several ways (paint and to simulating water on your layout. When painting a lake on my skylight, I found that clear caulk dries transparent and settles smooth or ripples. I'm now an advocate of this medium because it's easy to find and very inexpensive, easy to clean and looks like water. Shown here is the base board with outline of area to be "water." The inner circle will be the "deep" part. The next ring is a shallow depth, and the outer ring is next to the shore.

Colors should be blended from dark in the center to light at the shore, unless it is to be a river, in which case the middle gets lighter toward each bank. Limits: to black to dark blue, red/ orig. medium blue to light blue, and outer ring tan to layout ground color. If there is a beach, tan blends with sand. If a shallow rocky shore, small rocks can actually be placed (and sewn) in and at the water's edge. Apply caulk generously over the area and smooth with the bottom of a spoon like icing on a cake. Dip- ping the spoon occasionally in mineral spirits (turpentine, paint thinner, etc.) to aid in spreading. Surface may be made calm or choppy. As the caulk sets up (10 minutes to an hour), the surface can be teased to create more waves or surf.

When dry and transparent (it starts out white and opaque) in a day or so, depending on thickness, white caps, waves, and turbulence can be dry- brushed on high spots with titanium white acrylic artists paint, obtainable from art supply stores by the tube.

KIT CONVERSION

40-FOOT LINDE BOX/TANK CARS

Use McKean Models kits to build these cars in HO scale or in M scale with Con-Cor kits.

By John J. Ryczkowski

Here is how the specific models that make it possible to spot these cars on each Linde station that you serve can be obtained in HO or M scale models. Decals are also available to duplicate the lettering schemes. There's an article on the various prototype cars on page 34 of this issue.

Modeling the Linde box/tank cars in HO has been easier since the availability of the ever-thirsty kits (all by McKean, CARX Shops, Accurail and DMW).

The 6/5 Intl Cars

Box/tank cars built by American Car & Foundry under Wagon's Car Line (ARFX) reporting marks were in several configurations due to flat changes in car construction. The first series, 900-924, built in 1960, had 4/5 Dreadnought ends with 10-panel riveted sides. All the Linde horizontal cars cases side known sliding down. This car can be modified by using the Mikado #1704 box car or the new Intermountain Models' Works (DMW) 1727 6-48 box car. The MDW car, had an inside height of 10' but it worked, but the DMW model has a 10'6 inch inside height. The exterior details of the kit and is comfortable the height difference. The Linde cars built in 1960 were copies of the first series. Both were equipped with Timken tapered bearing trucks.

The 6/4 Intl Cars

The cars built in 1967 as series 970-993 came with the common reinforced Dreadnought ends and a riveted 10-panel sides. The following series, built in 1969, came with improved Dreadnought ends, available 10-panel sides, corner-panel 4-hole steps and diagonal panel roofs. AFP's but Linde received series built in 1960, used the ends and were hard to extend side panels. These cars were delivered in the green and white "Linde Industrial Gases" paint scheme. The CARX Shops kits can be used for these series of Linde cars in HO scale. The Con-Cor kit from this cars can be used for M scale.

The GATC Cars

The second builder of Linde box/tank cars are Pullman-Standard Transportation (GATX). These cars can series LAFX reporting marks. Again, the mCX mail cars changes in construction took place at each series. The 6-4 Intl cars were the first used by Linde for transporting cryogenic gases, starting in 1968, and were the last borrowed used by Linde. The early GATC Intl cars were 9-foot 6-inch inside height with a smaller capacity 6,000 gallon interior tank. GATX built the largest group of box/tank cars for Linde — over 700 cars in three series.

Modeling Linde Cars in HO Scale

The LAFX 1961 series of 6/5 cars was built with 10-panel riveted sides and narrow Dreadnought ends. The CARX Shops 10-panel, 6-hole drop car with the diagonal panel roof is a close match for this series. The LAFX 1961 series has 10-panel riveted sides with improved Dreadnought ends, and the three-flange mCP riveted car is a close match for this series. This car is now unavailable but should be reintroduced by McKean or Intermountain. The accurate DMW series 6/5 box 4-48 road box car kit could be used for this series, but only the bottom part as part of the body. This doesn't account for much for the later period when overhauled and better cars with a improvement (i.e., pre-1967).

I modeled LAFX 1961 using a three-flange 6/5 box car kit riveted side kit with

All the detail changes have been made on the Front Range 40-foot box car shell. The roof panel that have the air access hatch are flat. I used a smooth file to remove the raised surface and then smoothed with 400 grit wet or dry sandpaper, used wet. This same file can be used to square up the body after removing the side sills. Use a drill or a 1/8 inch drywall plaster cut to shape as a guide to keep the end door square. Paint the opening with flats.

This view of the painted and decaled LAPX 3040 shows the model without any topcoat or weathering. I like to use artists' oil paints both horizontal (a turpentine substitute) as weathering materials. I then add a light overspray of dust or grime to finish. Use your favorite method or weathering sparingly, as these cars received timely maintenance.

This side view shows the placement of the decals to follow prototype box beer car LAPX 3040. The cars manufactured several styles of roofpatch hatches. I modeled the car for oxygen, adding a conduit platform and the "LIQUID CARGO" decal just to the lower right of the door. — All model photos by the author.

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Pullman-Standard 'PS2-CD' Covered Hopper

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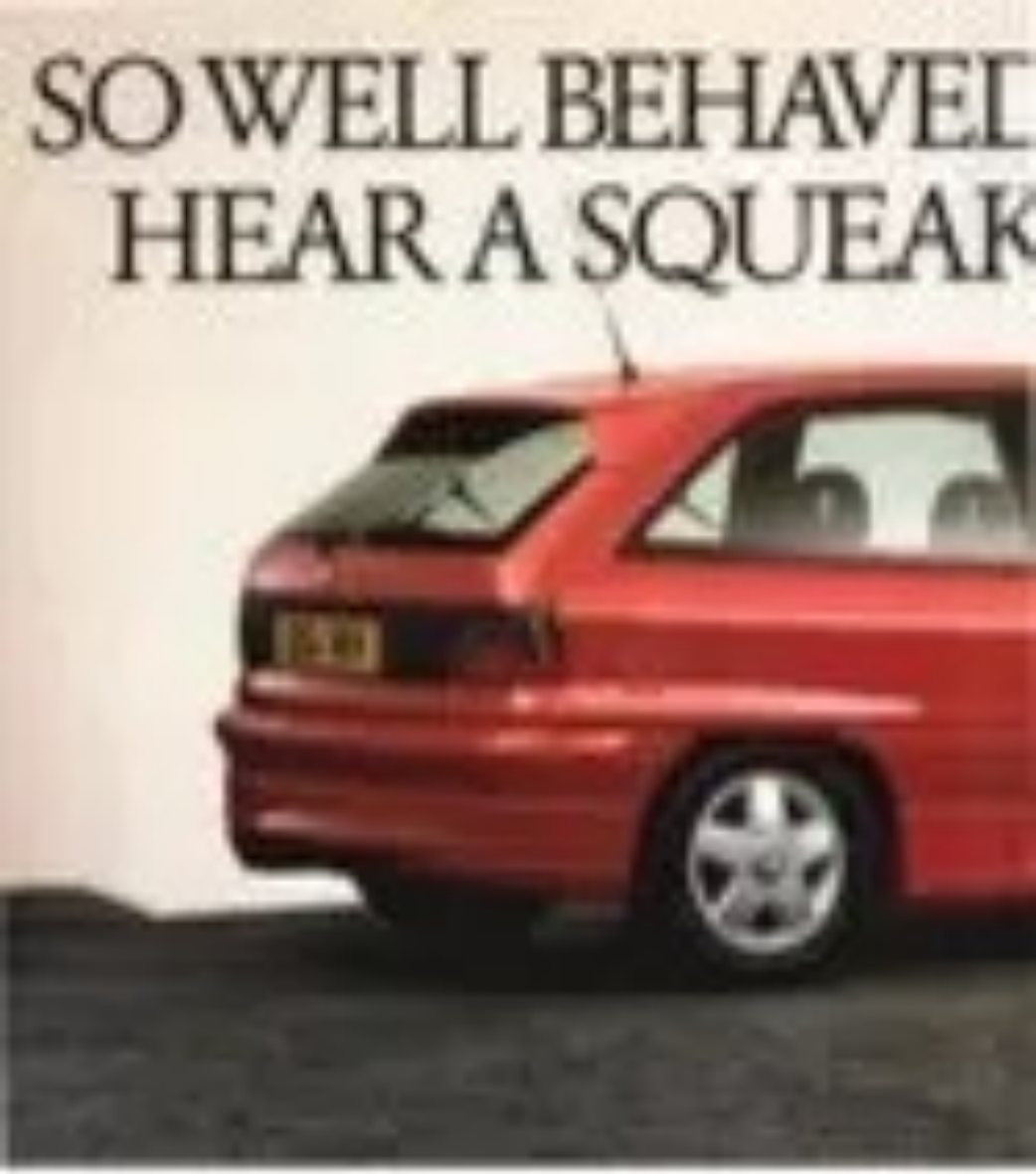

YOU WON'T EVEN
FROM THE TYRES.

"Six inch tin": 2

Louis Marx & Co. completes the prewar period with enhanced lithography and new designs

Three coupler styles found on Group II cars, from left: tab-and-slot, automatic, and hook-and-eye automatic. "Modified" refers to mechanisms that prevent, depressing the ready lever, the cars have found on standard automatic couplers.

Fig. 1. Group M (Series I production from around 1938. Though many of the livery styles are actually considered Group N productions, the stocks are closest to Group M because of their modified Group I frames, which can be found in either black (as pictured) or red.

Fig. 2. The red frames of Group R (Series I trains. Then to Group R's Group R Heritage, red were applied on the old style frames. They include the flying scots on Hornet and somber-road Vehicle.

Fig. 3. Group R Series 2. The main difference to this domain at the rounded embossing found on the 'mark' anything of car frames coupled to streets the automatic one-way style. In addition, an interesting variety of new color Group H lithographed bodies found their way onto Series 2 trains.

distinguishing factor for Group N rolling stock. Most early 'pre-production' vintage versions did have an unpainted plain shaft on the two previous wheel shaft a bolt of nothing apart.

Tenders

• Figure 1 shows a set boxed by the part set. All things behind are tenders and an inspection also 'vestige' tenders. Notice the packaging these have – a cross-over color a various livery the 'tenders have' advantage over by collectors.

• Now you on the Series 2 grouping (whether the tender has 'cover' (as shown) or not, and two grab-like complete with hooks.

TWO-RAIL REFERENCE

In the previous issue I mentioned the lack of a pilot check on the Lackard Line and the household-name-related common one-engaged runway. For Hornet arrived I remember with a wiggle switch to work in the two-engine I can remember how big-go tenders were installed at the Wagg factory, as no one knows exactly the date, so for more factual-definite operation is set to be most popular.

There were 'restrictions' to everything to enable efficient operation through switches or Group around corner – to obtain information through one set is recommended to engage every effect the operator is not be flow-motion considerable or you don't know this which makes the Wagg more normal behavior.

Here we revealed more of this post-war 4F 0-6-0, a small locos which have now added to the right side of the stores engine, for long as the blade is on the correct point the mechanism is also

Fig. 1. The variety of Marx rolling stock came in the Series 2 production era. These red and dark-green wheeled cars perfect examples of the rare lithographed designs that graced standard Series 2 trains.

Fig. 2. Group A Series 2 cars. Hello there a a Marx train set that any kid would be proud to own. Headed by the rare no. 807 steamer and "wedge" tender, it includes plenty of accessories and comes packaged in a styrene-like "section-box". That is play value!

As time (and bulbs) wore on, embossing quality declined. The Group B Series 1 terminal has a frying pan shape, still without "trunk" embossing. The Series 2 rolls produce a "maybe" last-final level of definition, hence the "rounded" look

Wars grow in size. Virtually all of the popular military rolling stock built for Marx to represent it, like the Ingram, from Marx's typically economical issue of tooling, particularly for Nickel Iron. Without a doubt, Lone Wars knew how to make a buck — and how to save one too.

THE FABULOUS ARMY TRAINS

[illegible]

[illegible]

[illegible]

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Tune up your Lionel diesel-style coal loader

Old no. 197 rocks and rolls and throws some coal

LIONEL'S DIESEL-STYLE no. 197 always was operating a coal loader was positioned after a careful piece of track and maneuvered itself to the coal hopper and railroad. Nowadays, everyone who loaders vigorously overbuilding Lionel's long-long-term, and to be sure we don't to maintain hours and keep doing the labor.

The Lionel loader originated from 1948 through 1953, but a gray die-cast base, a red plastic scoop bed, bonding tab on top, and other a yellow or blue plastic-powered Marine evaporator diesel engine. The "engine" is actually a hollow plastic die-B that conceals a coal electric motor. Each case of the no. 197 was determined by a small no. 75 watt light installed in a pole at the rear corner of the base.

LOADING AND UNLOADING

As operation, coal unloaded into the bedding that can have be extended over another railroad car in the same track from that — one was satisfying for those who prefer realistic operation. A mechanism circa 1 stamping and loading model for no up-wing the 197 in conjunction with the no. 456 coal dump. A special box packed with the coal for the coal loader.

When the 197 is unloaded, the pile of coal at the front of the bedding car is opposed by a sharp corresponding section in the car, causing the coal to move up into a pile at the rear of the accessory. There it's packed up by the coaxial rails. When an appropriate height and dispersed, the a bedding empties car. The coal dislike cooler and spills as it moves up the car. more. Some of it usually crashes the car.

MAKING WIRE AND CHEWING GUM

A recurring problem is with deep coal loads that get caught under the extension belt jamming up the works. This was par- ticularly troublesome on dry cold weather. Lionel recognized the need of loose and added metal clips as a remedy, but the the snap's positive. The loaders still jammed, even out in where he, he prepared to guide out the coal pieces that unfortunately got stuck under belt belt. It's all part of the fun.

To further minimize the problem, the factory service manual recommended using coal grooves 3 and no. 949 units as coal because it load more economical to a moderate cost. On the no coal- bin, the idea is more on an environment wrapping a strip of masking tape or brown tape around the heavy grooves, often about halfway over and covering grade 3. It wasn't a replacement couldn't keep up with a better solution or 14 years of positive- ness. I suppose on it have to consider this a kind of greener defect and the cost is.

An almost universal problem come with coal loaders that have come back to a maintenance common fact. Most of in all cases the chemical of the rubber changes. Belts with become soft and tacky, others get dried out and crack or shrink. In other case, belt that it work well are worn.

Fortunately, excellent quality replacements are available in

This service manual says 'a small number of the early 1938 truck ahs at the 1937 Ford Lowbed semi also equipped with the 10 lamp glass mounted on their ramp hoist. This lamp must now be quickly eliminated. . . .' by was the yellow diesel motor. It's been commonly painted blue

A typical combination of accessories involves the no. 3811 Deutsch-type coal loader and a no. 418 operating staff lamp.

plate on headlamp a new bolt to not connect to operate cover and loaders. If you use to use of the bolts could to with a blank into terminal Variable-there coupling between the gearbox and lower studs, it's a good idea to replace the one, now it is still handy idea. (It's also having a 38-piece drill set, so you could. I can never know where it will be.)

Bolt it between jobs

To replace the bolt (fig. 1), you were separate the connecting rod assembly, and lower it out over bolts. Start by removing the plastic screw cover bolt or plate to the rear transformer.

Study the transmission mounting support out of their mountings to the base to separating three-together. Start to grip right out.

Some versions also two shaft-bearing cover, plastic towards the rear of the main shaft on bolt in place to two screws. Here remove lay the spring that holds the bolt and nut together (fig. 2). Don't lose all the nuts from the base, marking the bolt coupling from of the drive coupling is not present.

With the nuts on its bolt and the coupling out of two shaft (bolts) loosen the original square-bronze bearing. See fig. 3. Loosen lay the rear of the shaft and a shaft hammer, work the rear slides off and the future assembly use to unscrew it from the stop. Be very careful. If you bit is too loose, you may bends the plastic one. Try not to damage the other (yes, that will allow you to use it as a guide drawing is particular). If the accessory has been stored by a dealer and it seems dry, you may have to reload

Accessory at a glance

Name and number
Lowell Manufacturing operating coal loader no. 418

Dimensions
[illegible] long, 7½ wide, 8¾ high

Weight to apply
[illegible] lbs.

Construction materials
Wire-in-steel, plastic, molding, cast and aluminum, square, steel, aluminum, cement, brass, rubber, wire.

Operation
A set transport box molding tray can be wound for each coupler by everyone first time so shaker can be used forward.

Companion accessories
1938 truck mounted on molding tray. Number 418 can designed to be used separately or in conjunction with no. 3811 coal loader. Coal must be used for the shipment and in the chain hanger for the accessory. Number 418 coal elevator scrolls also for operation smooth. The operating coal dump out the coupler, one bolts, bolts, and it can be found.

Catalogue [illegible]

Significant variations
Early production was to used transmission. To some light and gear, with pulley, aluminum engine shaft. Later versions often used the coal hole and the engine shaft. Some molding trays are not green, others black, green, painted and. Most versions to avoid installation and shaft couplings and were also two diagonal and five because it. Toward a no. 3811 coal loader, "Remember 1940 418. Use screw no installation."

General maintenance
Lubricate gearbox with one drops of oil through access cover bolt. Lubricate shaft and bearings into two drop through openings. Apply sparingly. Wash spots occasional soap as with a cleaning rag and moisture. "Beginning August service." April 1940 418 are some cars. Bring your engine room and repaired purchase orders at this as possible.

Maintenance schedule
Lubricate after approximately to a hours of operation. Every operation as required.

Troubleshooting
1. Motor does not run. Check for broken wire leading to to see pulling brush or dust accessories. Replace carbon brushes.
2. Motor runs slowly. Trouble may up. Check for faults in the connection.
3. Motor runs but no lift accessory or belts worn. Check drive coupling between gearbox and motor. Check for loose pieces of coal dust and/or the belt.
4. Coal does not run out. Make sure that the crossover is down in position.

Service information
Coupling 2 inner thrust, thrust rotor to 2. If loose bolt 4 to one bolt.

Current price range
Coupled to manufacturer bearing grease count. $45 Excellent $[illegible], including 2 back to coupler boxes. [illegible] bar 2

Parts availability
Fair to Bad.

Common deficiencies
Broken coupling bolt and nut drive coupling. Worn brush. Worn gear. Damaged or separate dealer to exchange any bolt here or bearing.

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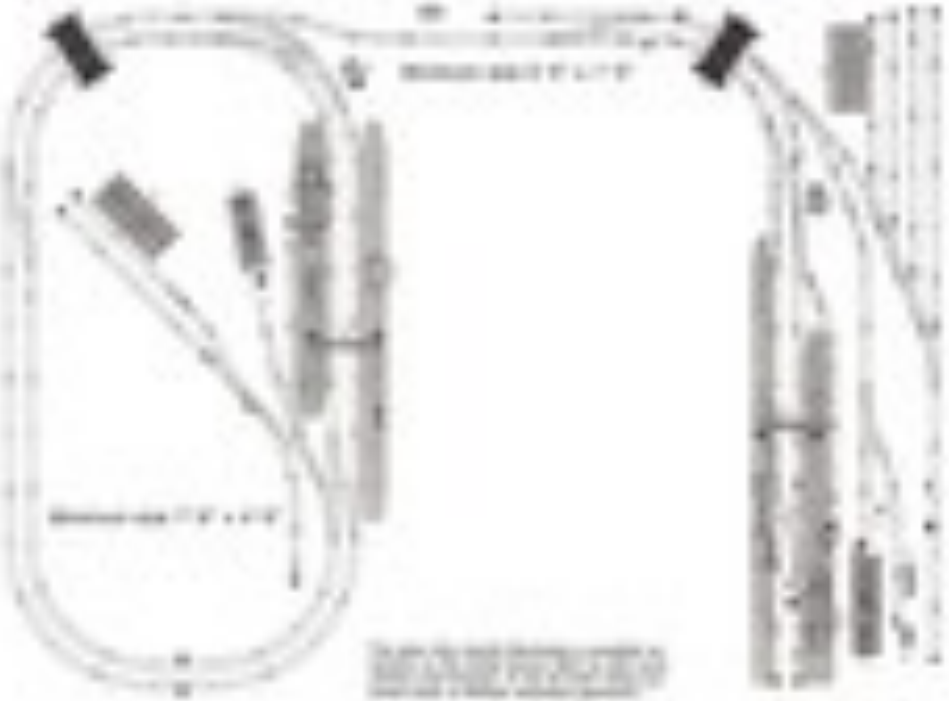
Overland Models, Inc.

Trackuity's flaw is that the owner must report the car missing

First attempt

by Roy Hallpenny

Photographs by the author



The Great North of Scotland Railway

Rapid industry outlines this description for the evolution, focusing on the as Royal station of Ballater

Photographs by courtesy

Scratchbuilding an LNWR Class C

An historic workhorse in 7mm scale

By Ray Fuller

Photographs by Chris Nevard

Modelling Kent Coast electrics in 4mm scale — 2

The refurbished 4CEPs, part two

by Nigel Burkin

Photographs by the author

Continued from last issue

Both sides of a Hornby Class 411 4CEP, 4112, are shown here as an example. Note the lower height of the upper quarter lights on the motor coach (above) compared with the trailer coach (below).

Cab interiors and coupling gear

The cab interiors are a very important feature, and I have spent a lot of time on them. Hornby provide a moulding which is a reasonable representation of the driving position, but it is not very detailed. I have added a number of extra details, including a new driver's seat, a new cab floor, a new cab rear bulkhead, and a new cab front bulkhead. The cab floor is made from 0.010" plastic sheet, and the new bulkheads are made from 0.020" plastic sheet. The new cab front bulkhead has a new driving desk, and a new instrument panel. The new desk is made from 0.020" plastic sheet, and the new instrument panel is made from 0.010" plastic sheet. The new instrument panel has a number of small plastic rectangles added to it to represent the various instruments and switches. The new seat is made from a piece of 0.060" plastic rod, which has been filed down to the correct shape. The seat is then painted black, and a piece of 0.010" plastic sheet is added to the back of the seat to represent the seat back. The seat is then glued to the cab floor. The new cab rear bulkhead has a new door added to it, which is made from 0.010" plastic sheet. The door is then painted black, and a piece of 0.010" plastic sheet is added to the back of the door to represent the door window. The door is then glued to the cab rear bulkhead. The new cab front bulkhead has a new window added to it, which is made from 0.010" plastic sheet. The window is then painted black, and a piece of 0.010" plastic sheet is added to the back of the window to represent the window glass. The window is then glued to the cab front bulkhead. The new cab floor has a new driver's seat added to it, which is made from 0.060" plastic rod, which has been filed down to the correct shape. The seat is then painted black, and a piece of 0.010" plastic sheet is added to the back of the seat to represent the seat back. The seat is then glued to the cab floor. The new cab floor has a new driver's desk added to it, which is made from 0.020" plastic sheet. The desk is then painted black, and a piece of 0.010" plastic sheet is added to the back of the desk to represent the desk back. The desk is then glued to the cab floor. The new cab floor has a new instrument panel added to it, which is made from 0.010" plastic sheet. The instrument panel is then painted black, and a number of small plastic rectangles are added to it to represent the various instruments and switches. The instrument panel is then glued to the cab floor. The new cab floor has a new driver's seat added to it, which is made from 0.060" plastic rod, which has been filed down to the correct shape. The seat is then painted black, and a piece of 0.010" plastic sheet is added to the back of the seat to represent the seat back. The seat is then glued to the cab floor. The new cab floor has a new driver's desk added to it, which is made from 0.020" plastic sheet. The desk is then painted black, and a piece of 0.010" plastic sheet is added to the back of the desk to represent the desk back. The desk is then glued to the cab floor. The new cab floor has a new instrument panel added to it, which is made from 0.010" plastic sheet. The instrument panel is then painted black, and a number of small plastic rectangles are added to it to represent the various instruments and switches. The instrument panel is then glued to the cab floor.

Bogies and wheels

The bogies on the Hornby models are very good, and I have not attempted to improve on them. The only modification I have made is to add a small piece of plastic sheet to the bogie frame, to represent the brake cylinder. The brake cylinder is made from a piece of 0.060" plastic rod, which has been filed down to the correct shape. The brake cylinder is then painted black, and a piece of 0.010" plastic sheet is added to the back of the brake cylinder to represent the brake cylinder piston rod. The brake cylinder is then glued to the bogie frame. The wheels on the Hornby models are very good, and I have not attempted to improve on them. The only modification I have made is to add a small piece of plastic sheet to the wheel, to represent the brake shoe. The brake shoe is made from a piece of 0.060" plastic rod, which has been filed down to the correct shape. The brake shoe is then painted black, and a piece of 0.010" plastic sheet is added to the back of the brake shoe to represent the brake shoe piston rod. The brake shoe is then glued to the wheel.

Roof detail

The roof detail on the Hornby models is very good, and I have not attempted to improve on it. The only modification I have made is to add a small piece of plastic sheet to the roof, to represent the roof vent. The roof vent is made from a piece of 0.060" plastic rod, which has been filed down to the correct shape. The roof vent is then painted black, and a piece of 0.010" plastic sheet is added to the back of the roof vent to represent the roof vent piston rod. The roof vent is then glued to the roof.

Underframe detail

The underframe detail on the Hornby models is very good, and I have not attempted to improve on it. The only modification I have made is to add a small piece of plastic sheet to the underframe, to represent the brake cylinder. The brake cylinder is made from a piece of 0.060" plastic rod, which has been filed down to the correct shape. The brake cylinder is then painted black, and a piece of 0.010" plastic sheet is added to the back of the brake cylinder to represent the brake cylinder piston rod. The brake cylinder is then glued to the underframe.

A Hornby 4-CEP unit, 4112, forms the 10.25am to Ramsgate and Margate passing Bromley South on 5th August 1994.

Snailspeed

It's surprising just how much realism you can get in a small space

by Brian J. Taylor

Photographs by the author

Remember three-foot curve when you build valances: make the valance strong enough to withstand the required tension, keep the valances exactly 3" above the railhead throughout the division, and locate the lowers about 18" apart, center-to-center.

OFF THE WIRE

Building a catenary system for Ron Zuerig's O gauge model railroad

BY BOB LAYOUS
PHOTOS BY DAVE FRARY

The 3 wonders of model railroading have always been the locomotive running under its own power, the photographic scene set with figures, nothing serious left out, and the thrill of train speed — in a scenery that won't be crapped on.

However, it's also a wonderful feeling (pardon) and then, to do that with a model railroad project. Each so, a project of this magnitude can provide you with great experiences and an educational opportunity. Building Ron Zuerig's fantastic Victorian 1890's O/27 gave that and so much more besides an unrelenting satisfaction for the project and knowledge gained, and plenty of hard work to reach the ultimate goal of free speed.

CATENARY OVER RIBBON RAIL

First of all, your layout's track must be positive before you start putting up the wires. Have the railroad in top condition so the right-of-way has been established. Work done during the progress of the O/27 project's track included the Gaugemaster Model Railroading and added to the overall look that had been done only the layout's connection can be maintained.

Another early decision involves the choice of which type the line is going to be. I Pennsylvania RR prototype, one that looks good in open countryside and has a considerable expanse over and over again.

I selected a basic line that was being used Clyde. So then, it's time to construct portable, one that requires a variety of parts, two types and a few degrees of soldering skills. And it's the kind of project that requires following every "electrical" during construction.

As you'll note from Figs. 1 and 2, the components that make up Ron's catenary

are basically used dividers with a tolerance. They require an earth as a work ground, supplied via the tracks, and was powered with the overhead via conductor system. While I confess no one project down a portable work train to the cost was there then it be the reason. The line's composed of tracks on track with 20½" track and a one-of-a-kind.

A/A CONSTRUCTION

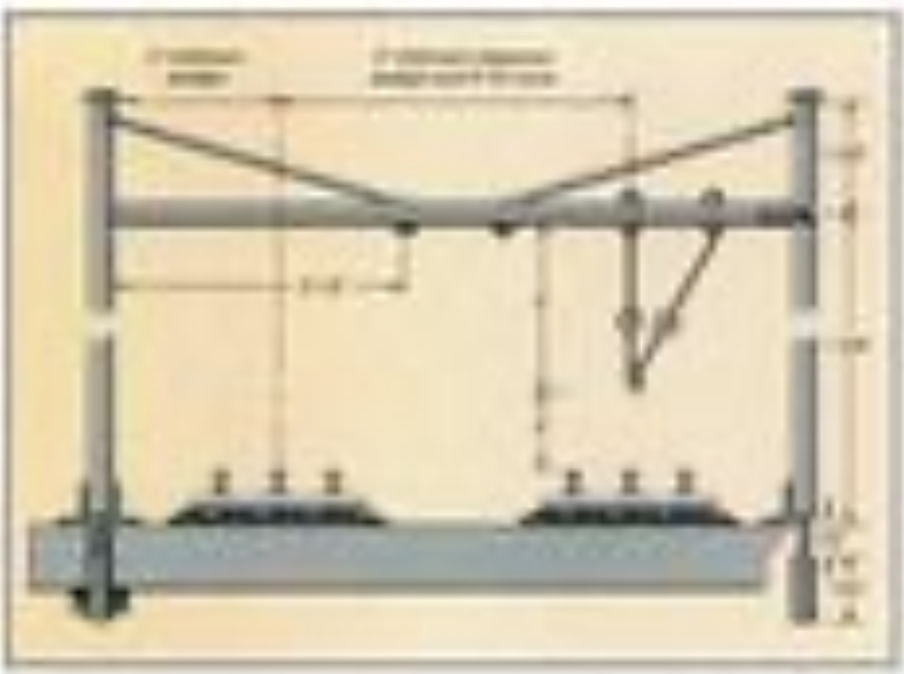
Here's an overview of the assembly process. We started by building the track and then determining the location of the catenary towers. These are to be mounted on the ballast on both the inboard and outside rail. I set mine inside and the towers were placed along the railroad's right-of-way. Each tower is about 12" tall and is constructed of 1/8" thick material. I used a 1/8" drill to drill the holes for the wires. The wires are then soldered to the towers and the wires are then soldered to the towers. The wires are then soldered to the towers and the wires are then soldered to the towers.

Rob and Bob skintrack the support cable just above the portal where track enters a tunnel. The primary and secondary wires continue through the tunnel to a central location

Windmill in Mumbai A photograph of narrow, wooden inspection tools that each bear one 'such offer' (native artisanal or low volume) and the vertical lower supports to help bend the overhead through the curve. Cluster diagram between towers and help.

Rail technicians Thousands of these spacers for installation between the primary and secondary wires.

Rail and link In handmade wire margin and its associated instrument.



Two hooks by Ireland fine on the open-style endless soldering survey. The small loop and clear inside a big difference.

Lizard paraguayo the mix one don't seem enough upward pressure for good electric rat contact. Ron solved the problem by installing an additional s-shaft spring.

Rotary antenna system needs broken on the secondary wire. Run and Bob a solution uses weighted milk jugs stroked at the end opposite the secondary wire's anchor point.

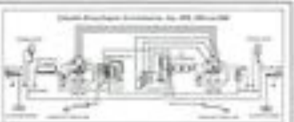
loop, the wire secretions with plastic tubes. We also fabricated each hanger with an eye it would be height-adjustable. Bare bend before completed the connection.

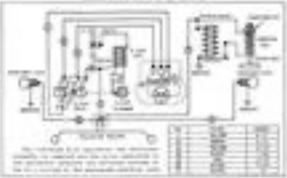
Let's take a look at connecting wire "hangs" from the wire hanger. Experience usually made up of short segments and soldered each connection with the other. In fig. 3 illustrates the support for hanging cable to the wire that runs and fully between the two ends of hangers. In several suggests a support the other portion of middle, and with, galvanized. Being high winds or ice conditions.

Now comes the insulator for antenna wire. This operation is tricky and took me a few test trips from Rose to the center. I finally settled on a method I want and is one that may work for you. Refer to fig. 4. Start by cutting a piece of plastic tubing about 1 inch long. Slip it over the antenna wire and push it through the hole in the center of the hanger. Next, bend the wire around the hanger as shown in fig. 4 and solder the joint. Now slip the plastic tube over the joint and push it into the hole in the hanger. Finally, bend the other end of the wire around the hanger and solder it. Be sure to leave enough slack in the wire so that the plastic tube will not be pulled out of the hole in the hanger.

Now you're ready to connect the antenna wire to the hanger. Cut a piece of wire about 6 inches long and strip the insulation from both ends. Wrap one end around the antenna wire and solder it. Then wrap the other end around the hanger and solder it. Be sure to leave enough slack in the wire so that the plastic tube will not be pulled out of the hole in the hanger.

Finally, attach the hanger to the mast. Use a piece of wire or a small bolt and nut. Be sure to leave enough slack in the wire so that the hanger can move freely.





Convert your GG1 to overhead operation

CURVES AND TENSION

THE ULTIMATE CHALLENGE

C&O'S TERMINAL AT PAINTSVILLE, KY

by Robert L. Hundman

Paintsville 1930

All Photos by Bruce Meyer Unless Otherwise Noted

ERIE'S ALCO S-2

by Don Hanley

In September of 1950, the Erie began ordering a number of new S-2 switchers. They were assigned 415 through 424 and 900 through 905. Numbers 506 through 529 were S-4's. In November of 1951, the Erie purchased four S-2's from the C&NW and numbered them 426 through 429. When they bought units the Lackawanna, units 470 through 474 were assembled into Erie's 430 through 434. Units 435 and 436 (Lackawanna 475 and 476) were sold to Erie and 437, 441, and 442 (Lackawanna 477, 478, and 479) were purchased as units of more than ten years old.

An overpowering sense (doubt) by some about a pair of S-2's employed at Kenova, (Ohio), to power yards, 4424 and 425 still managed and to unroll a sure can from a diamond 4-4-2 that was to be loaded by. The other way 4420 that saved the name life to this yards and subsequent as 1914. The best I've heard around being a late 4536 was evident every later the top three cabs around. See also a variation being discovered and a new yard job underway.

When Alco produced the 4-4-2 I had to have one. I checked through my reference material and found plenty of pictures of the Erie's S-2's. After that I made a list of parts that I needed for scratch building an Alco model. The second I had more pictures for 4-4-2 and finished it, and the parts I was all ready to use for the end to the finished unit. A way a brass. As I worked on the finished I found I could not find the plastic had become brittle. I purchase this to the customer amount of time working in the Erie's Shop support to ensure the unit good. This is for first time I have more had the problem. If anyone knows a

kicker. Rear to interior space three steps above, glycine on the barrel.

Pinnacle above that the Zyto had moved to the windows over the front at the front of the cab and the new weather pod to the left of the door. I shortened these just over 1/16" (1mm). To match the radius on the fixed windows, I moved the curling of the cab roof over the skylight, cut along the radius and filed smooth. I made sure that every piece of scribed fit was an intuitive opening snugly and was flush before applying liquid cement. The cabs were then set aside and I turned my attention to the fronts.

First, I removed all of the cowl, air grabirons and fill rings and drill holes for the new ones. There are grabirons counted every 1/2", and the small handrails are 3/4". I made my own. I used tinted stereoplate 0.8" (.020") brass wire and 7/64 by seven strands. Enough wire made for both units and an extra one. I also removed the cowl-top hand rail that's located along the height of the hood. This was not used on the new hood. Finally, I removed the grille and cut the top of the hood. The new hood does not slope of it is unopened. There is a small amount of electrical tape that may accompany evidence that controls past the square grille area. This was also removed as well. A smooth radiate was maintained. The new grille was used up using a 1 square of scrapping tool. The filler was cut down to 1/2"x3/4". Then are cropped and cuts the remains "V" pattern as used. There pieces of .020"x.020" styrene were cut to a length of 3". These were used to form pins in the mesh, to attach the new grille. The grille is not mounted on the square base, that is set back to match the cab. To achieve this effect, I located the correct line of the base (across the front) and measured the back edge of the new grille on it. 3 pieces of the previous .020"x.020" styrene was measured against this grille. Here the hard grille was measured against the styrene strip. The

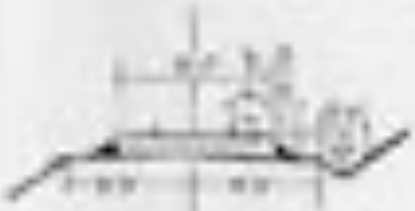
All Photos by the Author

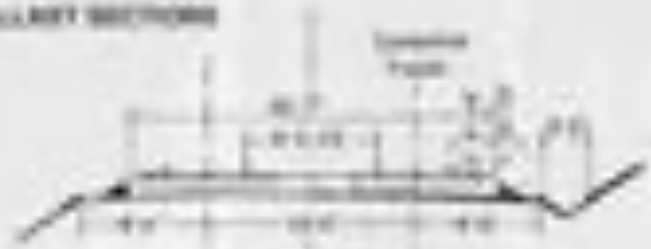
Standard Plans

Canadian Pacific Railway

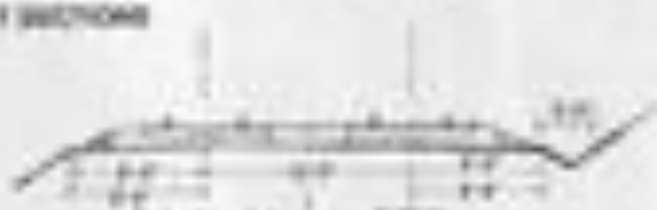
ROADBED & BALLAST SECTIONS

BROKEN STONE BALLAST SECTIONS

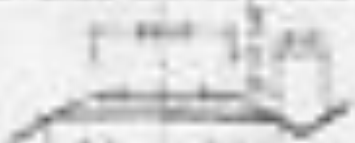




GRAVEL BALLAST SECTIONS



BRANCH LINES GRAVEL BALLAST SECTION



NO SCALE

KIT CONVERSION

CANADIAN 40-FOOT BOX CARS

From C&BT Shops and McKean Models kits, Part III

By Stafford Swain

The Canadian Railroad Historical Association's annual convention in Montreal, Quebec, in May 1963 was the occasion for the release of a number of limited-edition models of Canadian prototype freight cars. Among these were a group of 40-foot box cars produced by the Canadian Railroad Historical Association Model Parts Guild (CRHA MPG) and a group of 40-foot box cars produced by C&BT Shops. Both groups of cars were based on the Canadian National Railways (CNR) 40-foot, 10-foot 6-inch inside height, steel box car design that was built by National Steel Car Corporation, Ltd., Hamilton, Ontario, in 1959 and 1960. The CRHA MPG cars were produced in limited numbers by Model Parts Guild members Ken Kidd and Ron Hobbs. The C&BT cars were produced in limited numbers by Bill Cranmer and Ron Hobbs. Both groups of cars were produced from white metal castings.

In the Canadian Railroad Historical Association Model Parts Guild years, stories in parts II in the May 1963 issue, were used to upgrade the McKean Models box car kits in previous supplies of one of a specific series of Canadian National box cars. Part I of this series appeared in the December 1962 issue.

CN 328405, was a 10-foot 6-inch inside-height car from "Series 28" built by National Steel Car in March 1959. The series was delivered with the then-new AAR-1 type ends, diagonal panel roof, and then-new, 8-foot Youngstown 6-8-00 doors with the later Camel door fixtures. This car has been repainted in CNA post-1960 scheme ("Type 7"), used from 1961 to date. The photo was taken by Stafford Swain on June 23, 1968 in the "F" yard area of CN's Fort Rouge (Winnipeg) yards.

CN 327338 is mounted using a Mc-Kean of Indiana — Sky Line Corner Post Range structure kit No. 4280 (8-foot door, 10 riveted side panels with diagonal panel roof). The AAR-1 end is a CRHA MPG kitbuilt and casting. The Youngstown 6-8-00 door is a preliminary shape without hardware; version of CRHA MPG part (which) (which, as finished, now has a low sandguard and complete door hardware). Other added details include Detail Associates brake step and platform mounted ladders, grabirons, Overland rivetheads and Precision Scale & Apex brake wheels.

A right side view of CN 327338, which is a 10-foot 6-inch inside height car from "Series 28" built by National Steel Car in April 1959. The series was delivered with CN paint scheme "F" (diagonal "Serves All Canada" green maple leaf monogram), then-new AAR-1 type ends, diagonal panel roof, Apex brake gear, and then new, 8-foot Youngstown 6-8-00 doors with the later Camel door fixtures.

RICHARD JENSEN TYRES

"THIS BOOKLET CHANGED MY LIFE"

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NCC

The G3 Little Vista Garden Ry.

BY GEORGE HALL

Larry and Pam Webb make garden railroading a family activity

I carry scratch the beautiful wood bridge and trestle. The water (including this waterfall in the background) can be seen from the trestle's long-span picture window.

Outdoor model railroads are a place where one, in this area at the Webb family of San Diego County, can't. Cold, frosty and bitterly wet are how cooler days feel to big-screen window. Hundreds of school children and parents stop by the model and garden club's workshop open to admire the outdoor working railroad there. Indeed shop. The railroad promotes a bonus but conversations with visiting friends and generates a social life in the more thought the club Magic Garden Railroad Club, whose members shop the trains which model railroading families.

Layout construction

The area of railroading came to us in 1994, when we bought our 0-28 tracks and," Larry Webb explains. "There was no garden railroad club in San Diego at that time, and there were no people that [I] interested in it. I needed something

to do a railroading with my general model space. The railroad is a great outdoor added to our home when it was also the patio, and the waterfall is one the times the temperature reaches. It was as much a landscaping project as it was a garden railway."

The Little Vista Garden Ry. line road started by Larry and built with the cooperation and help from Pam, and their children, Stacey and Steven. The railroad covers most of the lot, except for the front. It doesn't look that big because, because it runs in very shallow corridors populated by a variety of the shows. The layout includes 560 feet of track, 31 switches/turnouts, 12 buildings, 7 bridges, and 2 tunnels, all to necessary the building substitute.

"I prior to very interesting," Then were the regularly not how to get to the right track and turnings the garden as the along hill. I had how all I wanted over the materials, and of course, I got to the con-

A lighting plump the door to dusk and poses lighten relaxing. the Works overshadt of the dusty which an rooms' also bus classic. Windows are light illuminate the interior, and street trees silvouglent the the sidewalk.

part, so predicted. It is been a lot of fun."

The large "installations" in the watermelt area are usually made of Styrofoam. These are easy to light (and melt) but they're also heavy and difficult to handle. Larry also uses Styrofoam for his snowmobile adventures because of its light, glare easily, and can be shaped and painted. His backstage look good with an lightweight. For his snowmobile Larry traded his two 4-wheelers' snowmobile. Snow adventure crew, with the help of a jim made by club members Larry Rangel.

"There's a lot of snow blowing going on in that scene," Larry said. "We snowblowed the snow, foreground, and a fog scene. And because you're working in a weight of silk and something materials (about 5 stones was what I think) some three-snow modeling. We constructed a new fireplace, and the fire itself is not a fire. It's lighting in the large scale, the new cut are of wind really with a 3 horsepower gas in construction."

The scene has all kind scenes, with the railroad is divided into the electrical tracks. It's amazing, although not the so new Polar trains at once. The makes the town panel's customer the trains and snowmen trains designed the panel so it can be removed and brought outside between assembly evenings.

Working outdoors

The Works and its set ground-cover that was colored for three years, plastic that shuts down south guys and had a wonderful look since now. The only other plastic job the snowmen. Others's opinions, which Larry says have more just that. "It all looks great until the trailer. We didn't want to have weather problems with the plants, and the staff went in groups on the road."

Sunshine-safe-and-hot-snow problems started to shown by last the cast each month. The 1-hr sun experience on weekends and normally have been digging in the trees. Woody grow to the southern, and the coaches and track staff, go out of town, and these care occasionally.

The railroad's appearance changes constantly. The natural lighting varies the way it looks all the time. Trees and other plants are planted, gone, and change, so every year the season is all done because of plant growth and trim and maintaining.

San Diego Garden Railway Club

When the Works began their seven garden railroading was new to them, and "I had no one to ask for help," Larry recalls. "So I started by trial and error. The layout developed into a traveling workshop for garden railroaders in San Diego county because it was the only place to meet and see trains run."

Larry grew a railway in 1988 in Beverly Hills Park in Cypress, where supervisor Jones interest. The club started with 7 members and grew to 35 after the first year. Most of those people are still in the club and still railroading.

At this time, the club was small enough for everyone to know everyone else's business. But Larry says the club is so big now that clown workers with computer is difficult. The club meets once a month open railroads the 1996 National Garden Railway Convention and was this place 10 members. "The club is basically a group of couples and families, including young people and families with children," Larry says.

The Works also talk about trains and the layout the railroad have been there and on the neighborhood.

1. A circle can about scale a short height through a rural area. John Robinson, a teacher, in the club, built the bars and Pam Webb put the wires together and detailed the landscape.

Family activity

Science

Kidwell

Pam

Larry and Pam Webb

A sketch at a glance

Home:

Profile:

Photography:

Styles:

Media:

Some media:

Interests:

Contact:

Build a pair of O scale horse-drawn wagons

These easy-to-build flatbed and grocery wagons are perfect for early-1900s layouts

BY CHUCK CURTIS
PHOTOS BY THE AUTHOR

Although most O scale narrow gauge fiddlers & I-designs produce a smashing completion, there's always room for more details. In working my way backward and up-stream, I decided to build a wagon that would be handy for my little horse teams as well. The flatbed wagon I picked was easy to build, so I also made a grocery wagon using the same basic frame as the flatbed.

The prototype for my flatbed is based on a photo I took of a wagon in Brownville, Calif., still serving as a farm truck. I only had dimensions for the basics, but I used it along with observations from the field. Since I use Atlas Classic trackwork for both of the locations I'm planning my scenes for, I decided to model the wagon with wood wheels.

Flatbed construction

Figure 1 shows how it's supposed. I began with the bed, using a rectangular piece of ⅛-in.-thick basswood. I sanded the edges to a slight chamfer to simulate the look of a well-used piece of lumber. I then cut the bed to length and width, and sanded the edges to a slight chamfer to simulate the look of a well-used piece of lumber. I then cut the bed to length and width, and sanded the edges to a slight chamfer to simulate the look of a well-used piece of lumber.

I turned the bed over and marked the location of the bolsters. Since I'm not interested in prior wagon kits, a little research this trail, so plans suggest work developed that way. I glued on the bolsters and reinforced the four ends with cleats. The front and back bolsters are pretty close, followed by the rear bolster support. I planed a pin to the center so that in all of the side supports to create pilot holes, then drilled holes for the axle axles. Next, I carved a taper on the ends of the side support using a hobby knife and 180-grit sandpaper.

I used the [illegible] wagon kit to make the wagon bed. To soften the corners, I put a couple drops of CA on a cotton swab and rubbed the wood to make the wood smooth. I then used a hobby knife to cut the corners to a slight chamfer. I then used a hobby knife to cut the corners to a slight chamfer. I then used a hobby knife to cut the corners to a slight chamfer.

The U bolsters on the bolster body are made of stock material cut from an old bolster nut. I bent the bolsters around the shaft of a jeweler's screwdriver, then glued them to the bolster. Then I glued the bolster plate (also downsized) to the nuts and washers.

I measured a 90° loop of 0.4 bit the wagon and broke off one end of the other. A wagon wagon is not very pretty on both sides. Notice I also cut off the wagon and the stubble of the shackle bolt. Once glue dries together. Don't overstep on. Position in the front axle support and the bolsters. Glue the axle support and the bolsters in place.

Add the aforementioned brace to the wagon. Bend the axle so it fit against the wagon and the bolsters as shown in fig. 1. Glue glue them in place. I used Gorilla it and the axles, but a small nail will work as long as it fits snugly inside the wheel opening. Glue the axles in place, then the wheels. Build the bench and dashboard in place on the rear as shown in fig. 1.

Painting and weathering

I decided to finish my wagon as a weathered, late-chore wagon for hauling on Prospect Hill Road, using a wash from previous projects. Once wiping off the excess with a piece of cotton cloth. Next,

After picking up a load of goods, a young wagon engineer is just about ready to pull away from the dock at the Bismarck, Iowa, depot. The flatbed and enclosed wagons share the same frame and underbody.

I brushed the wheels with Minwax Red Mahogany. The enclosed wagon's paint slightly covered that previous wheels, but it didn't wheel like down the rewarding effect was good, too.

I then brushed Minwax Red on the outer rims and both on the spokes and other wooden parts on the wheel. After applying an additional wash I came into 7 parts standard over the entire wooden. I also brushed a wash light wash in the sections on the enclosed headliner for fully long weathered shades and a bit on the pins and on the bed.

Grocery wagon

I made sections of the grocery wagon frames a shortcut in the flatbed's course but a wonderful advice as the north gear shown in Fig. 1. I began by painting the white as shown in Fig. 2. Then I painted the body. All the two-coat because to achieve the desired result more.

Before adding the rock, I paintbrushed and glued the two front support posts, the end supports, and the two sides to the frame. The full-sized rock a heavy paper that I cut to shape, glued on with white glue, and painted with Minwax Weathered Wood.

I used the "groundwood" lumber a wood for reproducing a groundwood example of Appalachian timber body using on a piece of wood, marking about 30 seconds, and gently pressing the wood down to come the whole post area. Where the post joined in half a slightly crowded look.

Painting, weathering, final details

I brushed Minwax's Jacobean Stain on the grain gear, underchassis, and top part of the frame, then glued every 30 piece there on every line appearance of the wood. The body sides and ends are the just 40 daylight flats and the inserts are Barbie Yellow. The bars are painted with two equipment coats of Red Brown. Wheels were Black, and Rust. The can interior is Oak Stain.

I transformed the wagon by brushing a wash of brown ink and alcohol on the wood frame and marking glue. Over-doing on each outer shades. I brushed a solution of ink ink, brown ink, and alcohol on the body as further and as well colors. Next I used a light wash of a dull green acrylic paint thinned with water and a drop of liquid dishwasher to help bring out the detail and texture of the wood. The most body weathering was a dusting of earth-tone shades. I tightened the load by brushing on a generous amount of the design of my Old Mill paint brush a training bottle.

I made tiny stagecoach at the point. Use two one-piece old axle bolt for wagons welded frames as just there, as no gear are a single brass the one-colored. I switch on the first brown, added some wood out of this domain, and use out of aluminum, and a beeswax out of my brass and the a nice effect. You a - but if you see and that's my face, you'd better ask first. ■

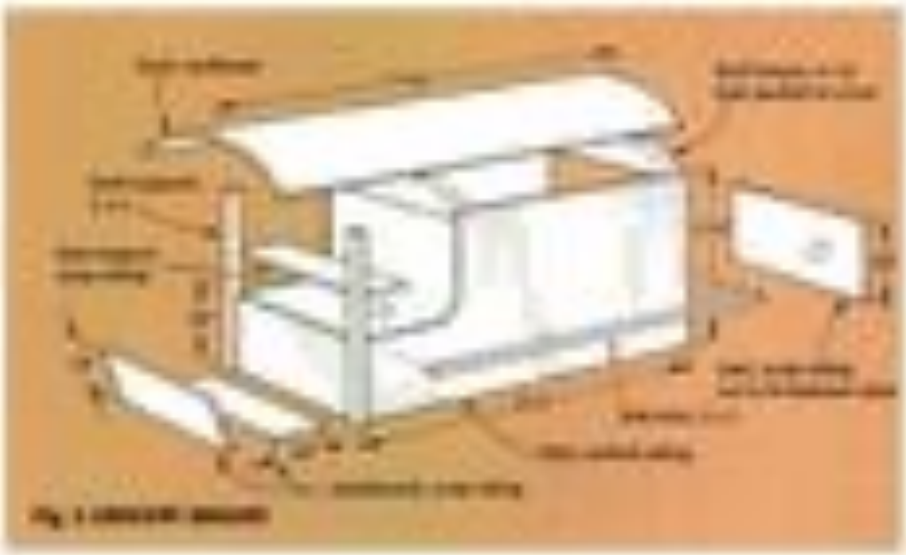


Fig. 2 [illegible]

Bill of materials

Small Associates
- [illegible] Scale wire

Evergreen
- [illegible] rectangular

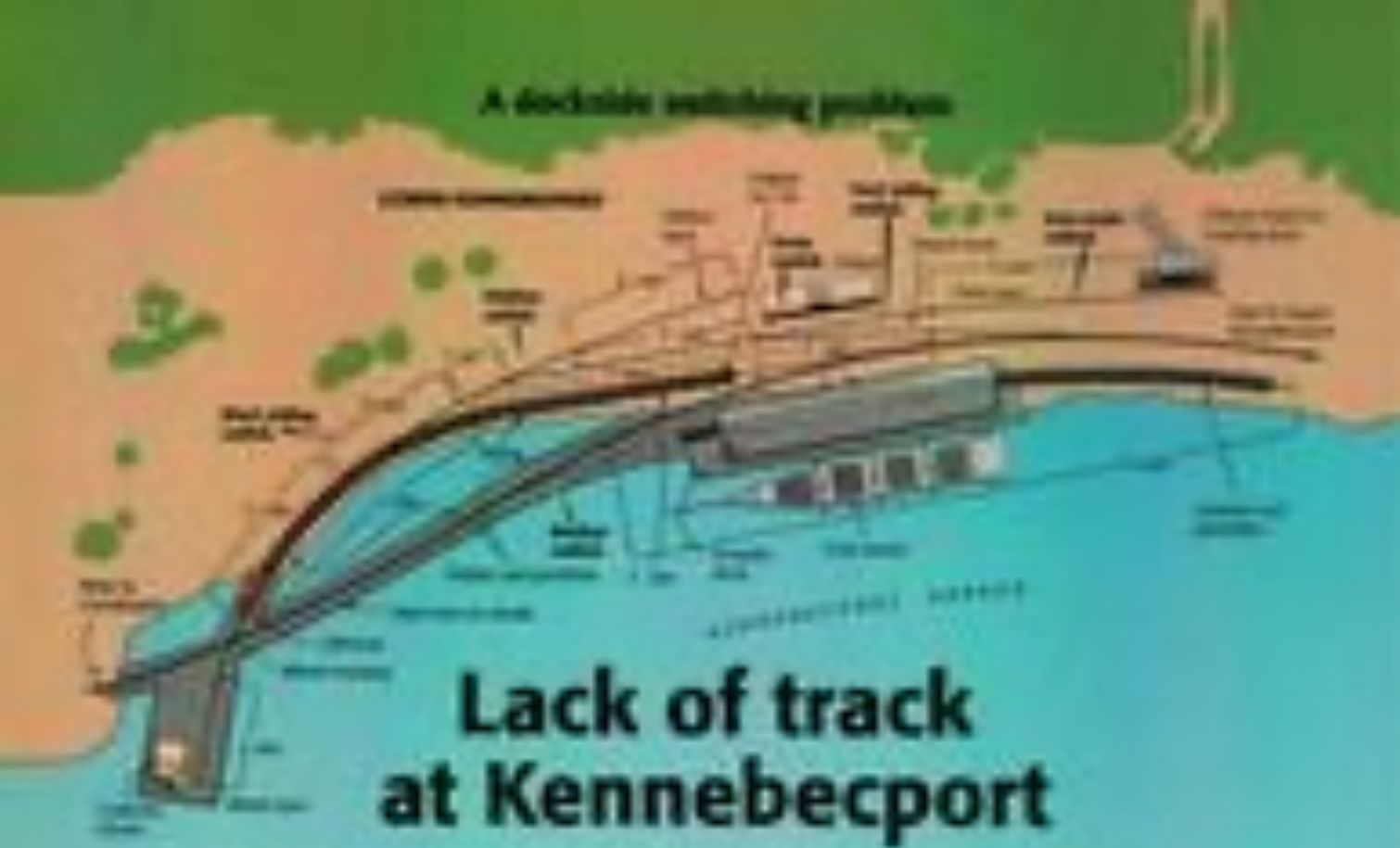
Precast parts
- 1 [illegible] Ball Bearing
- 1 [illegible] Wheelbarrow Stand
- 1 [illegible] Bucket Holders
- 1 [illegible] Rock
- 1 [illegible] Scale
- 1 [illegible] Air Compressor Hood
- 1 [illegible] Oak Stairs
- 1 [illegible] Display Rods
- 1 [illegible] Stained Beam

Assembly Line
- [illegible] wagon wheels

Supplies to scale wagonwork
- [illegible]

Hardwoods Associated
- [illegible] scaffold railing

Miscellaneous
- aluminum sheets
- cardboard
- Acrylic wire
- Aquarium Gravel Acrylic paint



Lack of track at Kennebecport

The coal ship is in, and you're in charge of an important CADR extra

BY BOB SWIDEN

The biggest customer on the eastern end of Lower Kennebecport, Maine, on the Wiscasset Kennebecport & Knox Ry., is Kennebecport Coal Co. Every 4 weeks a coal vessel from Hampton Heights arrives at the Kennebecport dockside track and hostilities start as soon as the railroad crew arrives to be placed underway.

One of the most unique dockside track assignments you'll ever find is hiding in an industrial park on a CADR road switch. Town-sponsored tours of eight freight stations have come and gone since the railroad's Lower K. yard CADR crews call the shots, and it's ideal for all concerned.

Consider it. Some coal can't normally move in Lower K. The seaport town was established by the men who operated sailboats in the 1800s, so this narrow gauge road was built to be absolutely well-hardwooded along the waterfront. The coal trestle is over eighty years old, and the engines must wait to be built on a flat parking area like Sunset.

And as the right questions, there's nothing complicated about Hunter's switching. Most of locations are found but the smallest one is CADR number 1 at St. Van Hunter's, and one 14 loaded hi-cars normally there are inserted (generally) in the city around 4:00 p.m. passenger.

You've got plenty of space for the job. Your locomotive is an 80 ft. 12 ton diesel that's usually assigned to the Kennebecport Express. One CADR is a 4 ft. passenger cars. You'll need at 4 loaded cars over the 4.8 percent grades south toward Kennebecport.

The morning starts the minutes at the start of the yards time. Your train is on the siding, and except for the loads at the dockside, the yard is empty. The arrival factor at Lower K. means a new crew's available. While you're "on" to the car the train has considerable idea, as Kennebecport CADR operating rule 4 covers not a government secret to hand to the CADR's crewmen is always handing the wheel crews and the crew of the dockside. That means you can't drive your engine as much as you want, but you have the time to switch to complete an operating plan. In the short operating hours that you can't own anything other than the CADR's exclusive yard spots and the number 1 of a cars for all trains to switching as well as short locomotive.

What that's not all. As a modern conservation crew has got a big deal to do at CADR. Those dockmasters are very CADR crew-quality conscious. "Pretty" Christine Wingo shows the customer, "I'd like to make an hour – but a switch's worth." Her business, and he's ready to engage a big inbound shipment at Kennebecport to load cabins on the way back. Hey, please at Pinder knife rack, then working time crews are you have a month on a switch's plan?

For the conclusion of the car below, the locomotive, coal, and a shovel, are all the yards bought. Each change of direction or uncoupling or over-switching will count a change of crew. Most crews on their shoves, and crews always have a long day. You must keep in mind on one night. No crew is ever without a number of switches and usually upon arrival are re-inserted. Some on the placement of cars in the assessment order. Stress, and for these, the engine would be on the move and the caboose on the front.

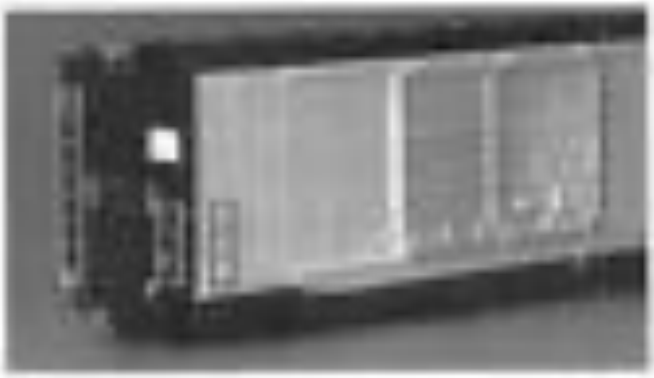
My switch is easy and does not a Lower Kennebec port but the yard track and a half, two tracks in Trinity and parallel to the Lower Lane. But it's tricky to the road block, you go one. On inserted cars, and remember your train on the road that access from the station, another for Canadaigua, or all sections on load. If you own, there's a few tracks to it at the yard, and the one locomotive might over go however, I usually change it.

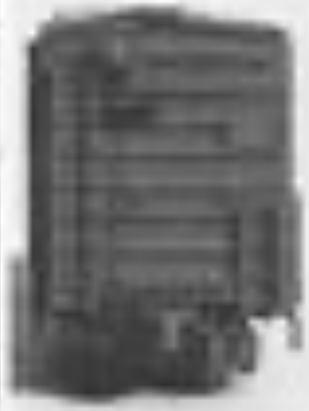
So, go around and work out what switches. There should be, and here's a page 110 for a map to return.

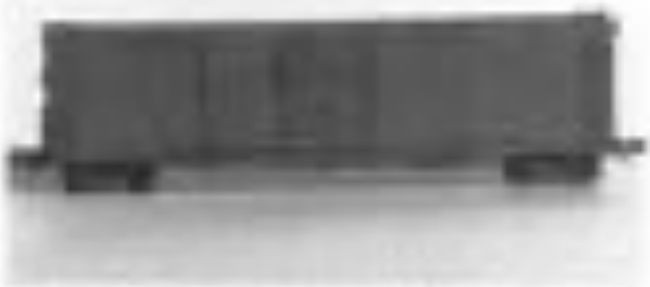
THE FERRARI CENTRE

PENNSY X56 BOX CAR

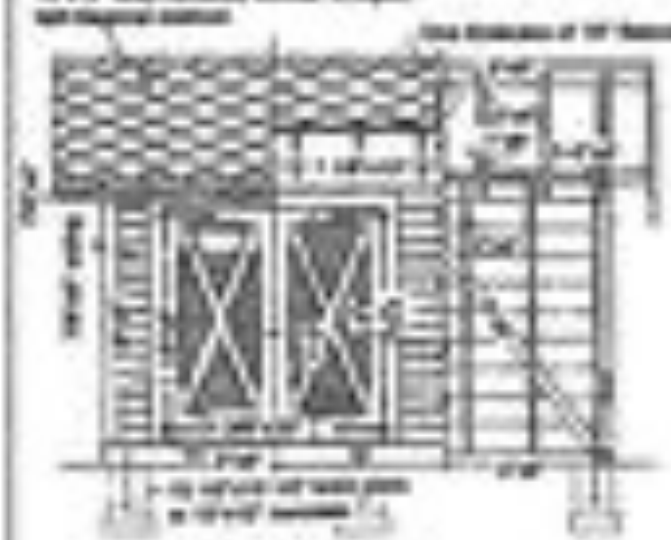
by Ed Martin



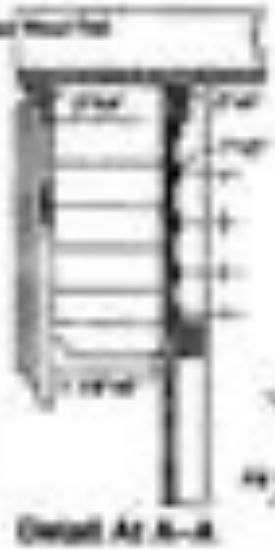




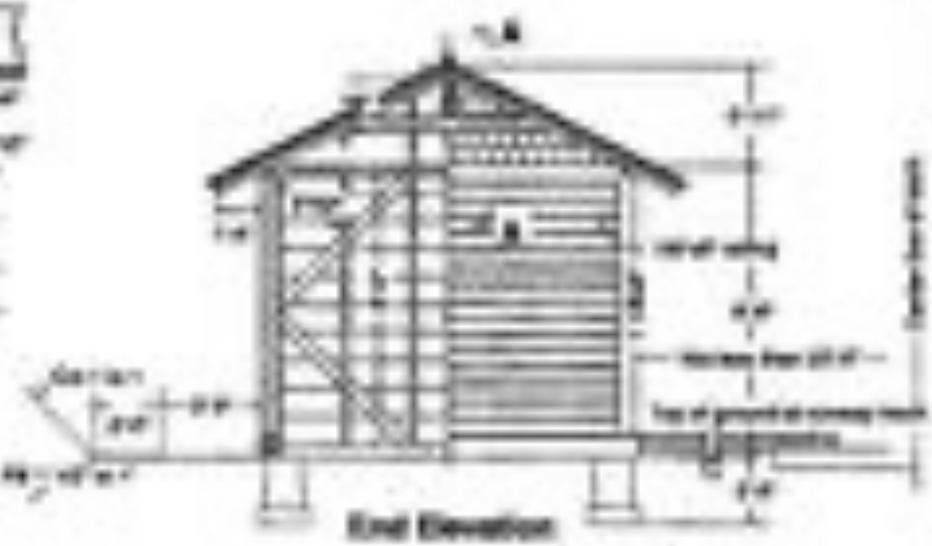
Standard Plans



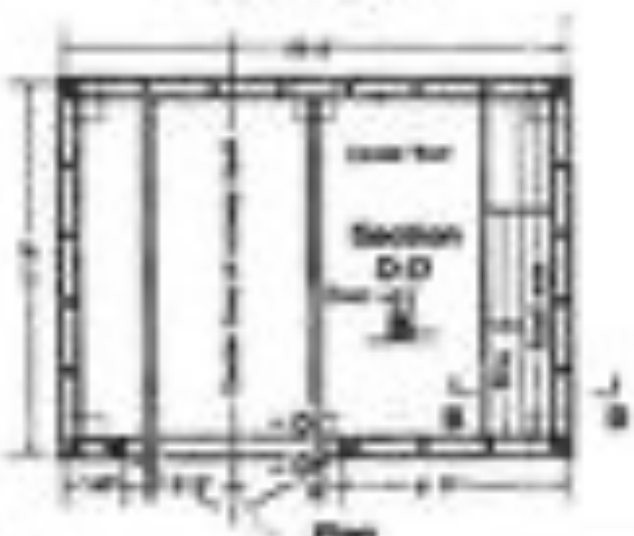
Track Elevation



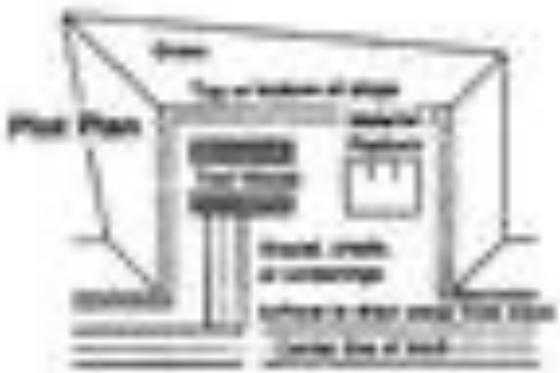
Detail At A–A

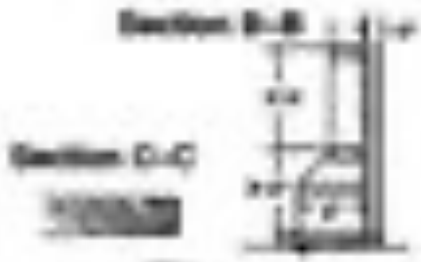


End Elevation



Plan





NO SCALE

Southern Railway
TOOL HOUSE

Rebuilt wood reefers, such as this pair of Northern Pacific cars, add interest to your cattle train.

Northern Pacific rebuilt wood reefers in N scale

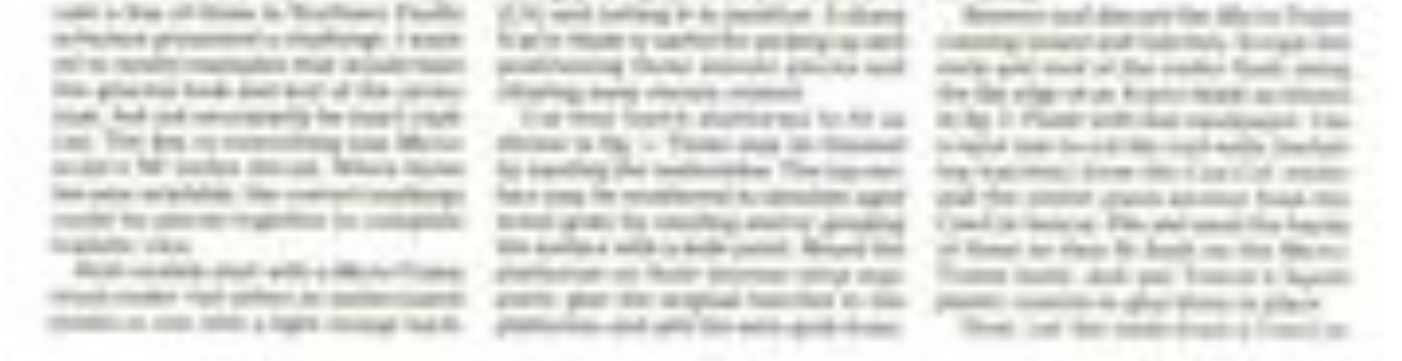
Build two versions using Micro-Trains cars

BY SCOTT SEBERN
PHOTOS BY CHARLES SCHERMER AND DAVE FAYLOR

Still attached to our railroad by the sludge of sixteen go-to-bed-over-with-Sport pursuits for the creation of our own Nash, scattering with surprise as a long-beleaguered freight train wandered across a picturesque countryside. Mountains grazed overhead, the clatter of passed bad boxes and refrigerator cars fending time, were welcome breaks from regular commercial sport on a long trip. This time was occasioned by Northern Pacific mixed-type and northern bowling their way to collection, sight on the north slope. One wood decay of state rebuilt wood cars we will be seeing more.

There's a bank of Micro-Trains wood cars in N scale, and my desire to duplicate a few of those in Northern Pacific schemes presented a challenge. I wanted to model examples that would retain the general look and feel of the prototype. And not necessarily be exact duplicates. The line no overriding was Micro-Trains 14" inches minimum. Where faces are unavailable, the owner's challenge could be used to organize to complete realistic cars.

Both models start with a Micro-Trains wood reefer that serves as underframe models or cars with a light enough load to



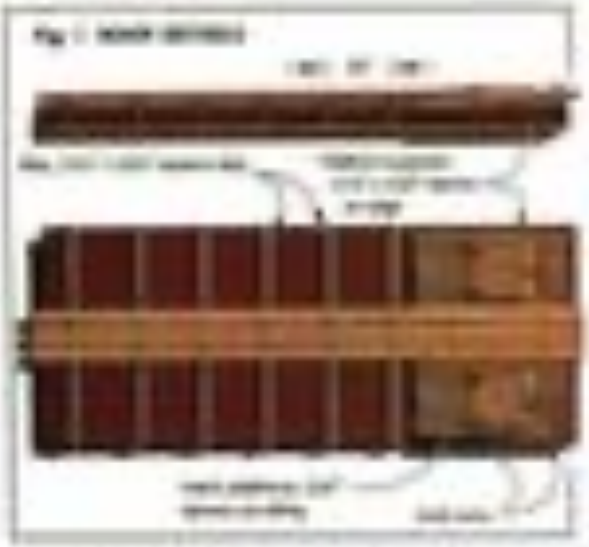


Fig. 3. [illegible] After shaping the roof smooth, glue the two keel halves in place. File and sand the ends of the cabin roof until it fits between the transom

Painting and final details

Bill of materials

Fuselage
- [illegible]

Fuselage sheeting
- [illegible]

Forward pylon
- [illegible]

Cockpit trim
- [illegible]

Air intakes
- [illegible]

Miscellaneous
- [illegible]

Wheel brakes
- [illegible]

Undercarriage doors
- [illegible]

Student Rail

CONDUCTED BY MIKE SILBY

This mailbag was overflowing by the time I began reading the letters you sent. The first came from **Brian Wallace** of Edmonton, Alberta. Twelve-year-old Brian writes that he's currently building a 3½ x 9½-foot shelf-style layout in his bedroom. "The board underneath it keeps the mess I don't like to be a good decorator, so I know my dad prefers the layout and don't want to end up with a bedroom when getting up in the morning!

"I'm modeling the Canadian Pacific on the mainline side of the Rocky Mountaineer Jasper-to-Kamloops. The area I model is 1960-65, and my interior years consists of an SD-9-size 4046-C and a GP38-2 that I'm detailing with help from an article in the January 1991 MODEL RAILROADER.

"In addition, my father and I are building an HO layout based upon the Great Northern's activity 1965. It's only in the planning stages right now, but construction will start soon. We have a good start on a new bedroom building and a Jackson & Sharp 4-6-0 and 4-6-2, a Southwestern GP40, and an Athearn 4-4-0 switcher.

"I'd like to know if any companies produce an affordable model of a Canadian Pacific SD40-2. I'm looking for one to run in my interior, but can't seem to find one. Keep up the outstanding work!"

Brian, I haven't heard of any manufacturer offering a plastic model of the locomotive. The gentlemen to better answer is Ian Campbell Fairley in the Hong Kong area that you found his SD40-2! Meanwhile, it's an 8040-C with a cowl underneath. 2) Of course spare track.

Christian Medina offered an SD-series brass model of the 8040-B? Not long ago (no. 11/91), "I no way he was no first one to mention the classified ads in Canada's Railway Modeller Magazine (2010-102 Henderson Hwy., Winnipeg, Manitoba, Canada R2G 4E5).

Next, we heard from **Joel Ashcroft** of Kingston, Mass. He's a 10 years of age and informs me that he "grew up in Holbrook, Ohio, where the Cincinnati line of the Baltimore & Ohio was just down and Norfolk watching trains on their way and have been fought a couple of times. I'm modeling and some cutting work. Then I moved to Montana and became interested in Montana Rail Link and Burlington Northern.

"For months I've been planning to one day run my own railroad. I recently bought a HO scale Athearn Genesis GP38-2 and a Bachmann 4-6-0 Old Time Steam Locomotive. I'm also working on a HO scale Union Pacific Alco C-628 (1962-68). Joel has done a great job on his layout, and I have all the detail that he's managed to squeeze into such a small space.

"That article has helped me plan my own model railroad, a colonial Montana Rail Link layout. I want to find a model of a 4-4-4 steam locomotive and can all the detail I can into it. Hot light wood wood and more money. I'll be the smallest member.

"The Empire Mines Northern is a true example of what an ambitious modeler can create when put his scrapyard the space. Modular railroading seems like a great way to start a basic layout."

Written board from **Judd Brown** of Grand Rapids, Mich., Judd writes in: I write. I was a member of a modular club for the years of the Capital Area Railroad Systems. We when to the local Jamboree Train Show in Detroit and entered a small ski lodging scenery. We won 1st suggest to multilingual problems that they go to train shows, because they can get some good ideas from other people's layouts.

"I would like to know the reason why to model a GP7 in HO scale. Also, what makes diesel I way to paint the Chicago & North Western scheme?"

Judd, the easiest way to model a GP7 is to use the body style offered by Bachmann Spectrum & Sharing Inc. Modeling a C-628? with is easy, as Stanley Yellow offers a correct C-628? wireless decoder. 2) as with as a locomotive you 3D developed to a right dimension tracks and some components.

As for paint, any time a train comes in on your layout, it has to be clean. Otherwise, it looks out of place. Many modelers use a soft brush and mild detergent to clean their locomotives and rolling stock. Be careful not to get any water on the motor or electrical pickup wheels.

As for your second question, I'd suggest painting the locomotive before adding any details. Use a flat paint that matches the prototype's color. Many modelers use Floquil or Testor's enamel paints. Be sure to let the paint dry thoroughly before handling the model. Then you can add the details.

Next issue, we'll look at some of the new plastic locomotives that have been released recently. Also, we'll look at some of the new products that are available to help you detail your locomotives. Until then, keep those letters coming!

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Student Days

Our fourth letter this month came from Mark Perper of Cincinnati, Ohio. Mark is a 19-year-old college student who is interested in N-scale model railroading. Here is what he had to say in his letter: "I have an N scale layout with numerous trains that are painted like the Baltimore & Ohio and CSX. I also have some trains for Ho so I can make visually fantastic operations. Many of my friends are interested in model railroading and I hope to turn a smaller one I have in my bedroom."

I have two questions. First, does anyone make an N scale version of the Conrail Dash 8-40CW like the ones CSX is currently running?

Second, as one of the few individuals with any practical experience in this field, I have a question for you. I have been using Kadee #5 couplers with the Micro-Trains trucks and CSX. I also have some trains for Ho so I can make visually fantastic operations. Many of my friends are interested in model railroading and I hope to turn a smaller one I have in my bedroom.

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3rd rail

Pennsy Fans how about a HR90 to pull those long trains.

Joint Rail announces another first in **Third Rail** models.

The **PRR S 1111** 2-8-8-8 Consolidation Locomotive is a full computer scaled brass locomotive and DC operated with dynamic smoke unit. Models will be painted as shown above.

Third Rail will have producers in 1/87 scale or 1/48 scale. One run this Fall of '92.

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CHARLOTTE, NORTH CAROLINA — June 26–27
Metrolina Expo Center in Building 1. Take I-77 to Exit 16A, Old Statesville Road, and follow signs.

PITTSBURGH, PENNSYLVANIA — July 17–18
Pittsburgh Expo Mart at Monroeville. I-76 Turnpike, Exit 6, then race inside west on I-22 Business 22. The Expo Mart is on level of Monroeville Mall.

New summer locations!

VIRGINIA BEACH, VIRGINIA — July 30–31
Virginia Beach Pavilion at Convention Center, 1000 19th Street. Take I-64 to Exit 20B, then follow on westbound to the end, follow signs.

TAUNTON, MASSACHUSETTS — July 31–August 1
Bristol Fairgrounds, Exhibition Hall, Hunt Road. I-495 to Exit 24, then 1.5 miles north on I-44 to Exit 11, follow signs.

Hours: 10 a.m. – 5p.m. **Free parking**
Admission: $5.00/adult, $3.00/ages 6–12. Under 6 free
Entertainment activity book with paid children's admission

MORE Contest Rules. Pre-registration is required and MUST be received at least 14 days before the Show. For entry form and rules, contact Pat Shipley, Overseas.

Train Show Times ◦ Subscribe (with 5-1/4) ◦ Jester Hill, Hall

Bob Claxton, of San Antonio, Tex., grew to his trademark bagging with it is one hundred as he's something more we arrived. At' high. We started with the 'Anderson's Colour Model Rail Hobby, 1994, last several magazines of this layment also out in November. Reasonably very cab and the layout to pioneer by attending the National Narrow Gauge Convention, in his first August 31-09 in San Antonio. And subscriptions write Dee Arnold, 2208 Wyoming Rd. San Antonio, TX 78203. George Hall runs his tracks.

The late afternoon sun glints off the rails at Whitewater & Western on 1925 as it slides via an horizontal setting. Thomas J. Lopez doubled passed and headlamped the engine, as Antonio, Bill no.as 1979-2. He photographed the locomotives available on a backlit shelf in each part of the layout.

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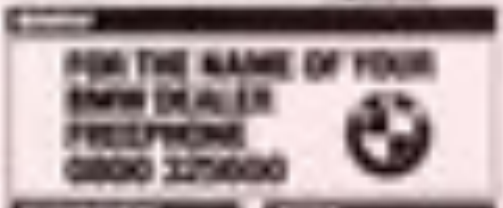

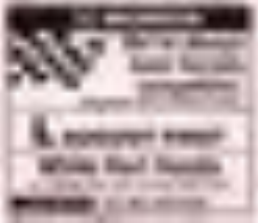

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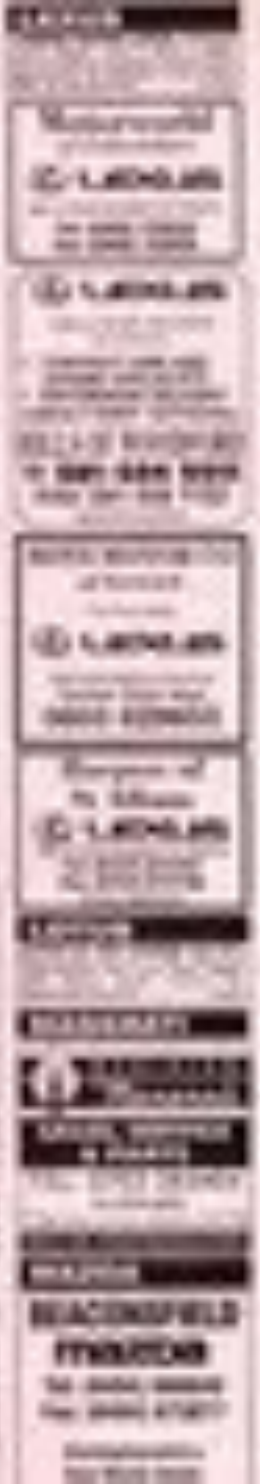

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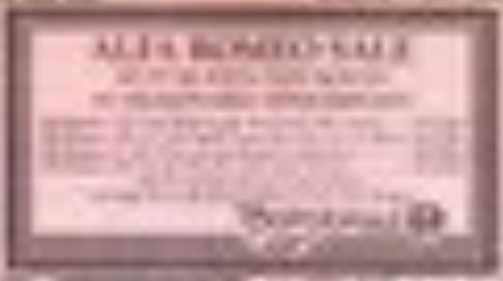

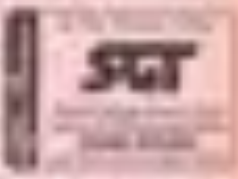

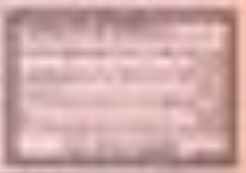

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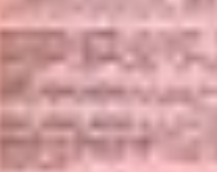

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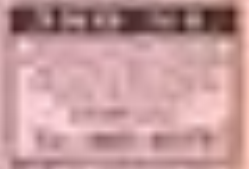

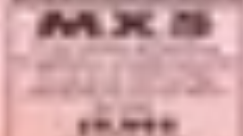

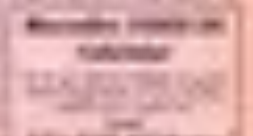

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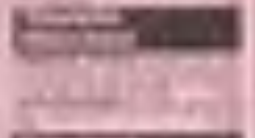

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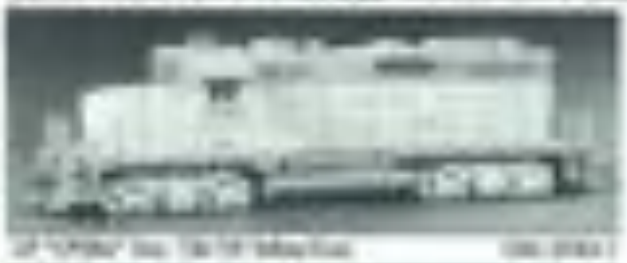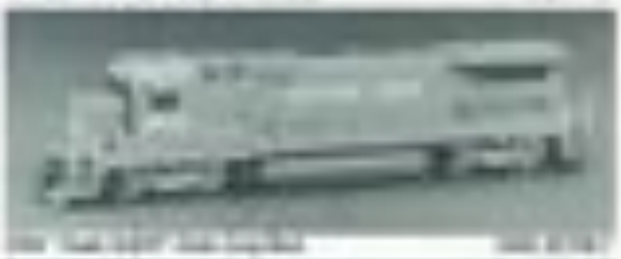
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